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AMERICAN SPIDERS OF THE GENUS *ACHAEARANEA*
AND THE NEW GENUS *ECHINOTHERIDION*
(ARANEAE, THERIDIIDAE)

BY HERBERT W. LEVI

WITH FIVE PLATES

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No. 3—*American Spiders of the Genus Achacaranca and the new Genus Echinotheridion (Araneae, Theridiidae)*

By HERBERT W. LEVI

In two previous papers (1955, 1959) I revised *Achacaranca* species of North and Central America. Since then, most of the types of South American species have been examined and large collections have become available from South America. This paper provides a key to all American species and indicates diagnostic characters for the species not included in my previous papers. One additional new species has been discovered in the United States, the male of another is described for the first time, and one other from Central America was previously missed because it had been placed in the wrong genus. Also, several errors were discovered in my earlier paper on Central American spiders: Several species previously thought to be similar but distinct were found, upon examination of additional specimens, to be conspecific, as the characters thought to separate them are variable. This was found for the species here synonymized in *A. tacniata*, *A. nigrovittata* and *A. tessclata*.

Several problems remain. Sometimes *Achacaranca* species are difficult to separate from *Theridion*, particularly when only females are known, or when there are too few males available for a careful anatomical examination. The other problem is that several species previously known only from a restricted area may be cosmopolitan or cosmotropical. Thus a longer-used name may be applicable to *A. acorecense*, now known from the Mediterranean and California and possibly also from New Zealand, and for *A. tessclata* from Mexico to Paraguay and also probably identified from New Guinea and Pakistan. Another is well known to be cosmopolitan, *A. tepidariorum*. The latter species probably has been transported by man. It may, however, have been native to South America, where it is found in cities but has also been collected in fields. But ecological information on this and other South American species is scant.

Four similar species, superficially close to *Achacaranca*, are placed in a new genus even though it is inadvisable to describe a new genus from one sex only. No males could be associated with the four; all are known from females only. All have a very distinctive large epigynum and a mesally-directed thorn on the fourth coxae, apparently a functional part associated with the

epigynum. A thorn is present on leg four of the European *Theridion bimaculatum* (also found in northwestern United States), but is on the proximal end of the femur and has a different appearance. *Theridion bimaculatum* is further distinct in having the legs much longer than those of the species now placed in *Echinotheridion*.

For permission to examine types I am deeply grateful to: Prof. M. Vaehon, Muséum National d'Histoire Naturelle, Paris; Dr. G. Owen Evans, Mr. E. Browning, and Mr. K. Hyatt of the British Museum (Natural History); Prof. G. C. Varley of the Hope Department of Entomology, Oxford University; A. Riedel and J. Prószyński of the Polish Academy of Sciences; Dr. A. Collart and Mr. J. Kekenboseh of the Institut Royal des Sciences Naturelles, Brussels, and Dr. O. Kraus, Senckenberg Museum, Frankfurt.

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A paper in press discusses the location of the many difficult to find old type localities in South America.

ACHAEARANEA Strand

Achaea O. P.-Cambridge, 1882, Proc. Zool. Soc. London, p. 428. Type species by monotypy *A. insignis* O. P.-Cambridge, 1882 [*A. trapezoidalis* (Taezanowski)]. Homonym of *Achaea* Huebner, 1823.

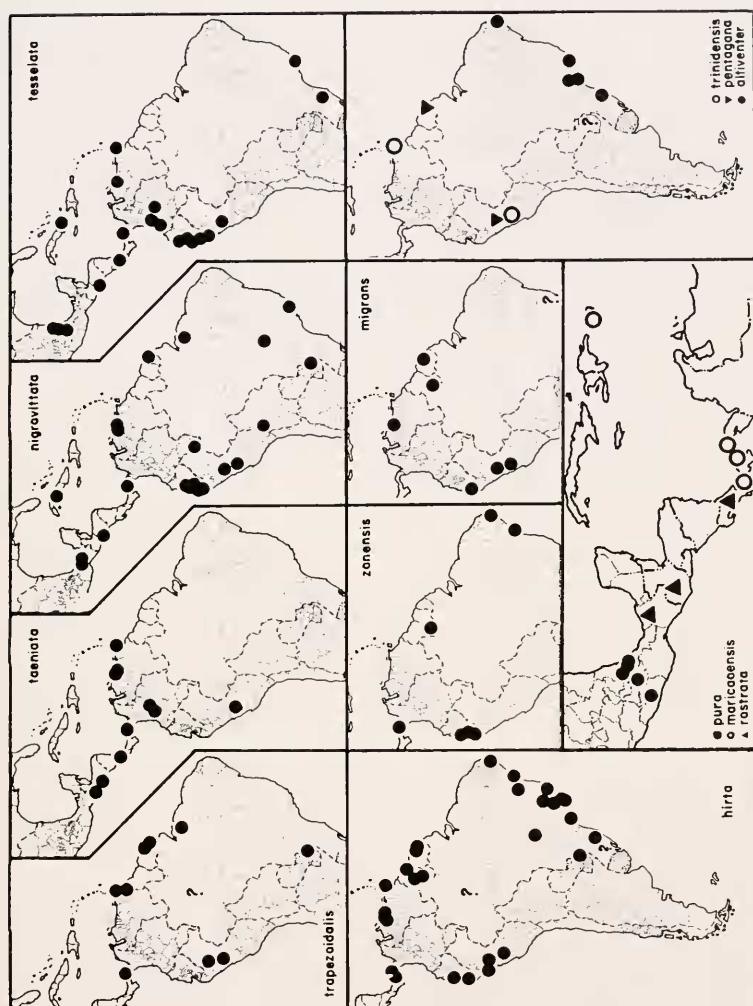
Achacaranea Strand, 1929, Acta Univ. Latviensis, 20: 11. New name for *Achaea* O. P.-Cambridge preoccupied.

Diagnosis. The median apophysis of the palpus is broadly attached to the tegulum or attached to the embolus, with which it may form one sclerite. The radix is absent. The cymbium often extends beyond the alveolus. *Theridion* differs by having median apophysis and embolus as separate sclerites and radix usually present. Unlike *Theridion* the abdomen of many species is higher than long, often with a hump, rarely longer than high, very rarely subspherical as is common in *Theridion*. Unaccompanied females, however, cannot always be separated with certainty from related genera (Levi and Levi, 1962).

Distribution. Three species might be cosmopolitan (*A. tepidariorum*, *A. acorensis*, and *A. tessellata*). Fourteen species are known from the United States and Canada but only the cosmopolitan *A. tepidariorum* is found from coast to coast. Four species are mainly eastern (*A. globosa* to northeastern Mexico, *A. porteri* to Panama, *A. rupicola* to northern Alabama and Georgia, *A. conjuncta* southeastern states), five are western (*A. canionis* Utah, Arizona and California, *A. acorensis* California and probably cosmopolitan, *A. ambers* Utah, *A. chiricahua* Arizona, and *A. fresno* central California), and three are southern (*A. schullei* is southern from Florida to California and Mexico, *A. insulsa* Texas and Mexico and *A. serenoae* Florida and Alabama; Map 1).

Achacaranca florens occurs from northwestern Mexico, Cuba to Panama (Map 1); *A. maricaoensis* is found in Puerto Rico and Panama; and *A. rostrata* from southern Mexico to Costa Rica (Map 2). There is one endemic species on Cuba, one on Jamaica, five in Mexico, and five in Central America.

Nine species of *Achacaranca* are widespread in South America. The cosmopolitan *A. tepidariorum* is found as far south as Chile and Argentina (Map 1). None of the other widespread species have been found in Chile. *Achacaranca florendida* is found from Texas to Venezuela (Map 1); *A. taeniata* and *A. migrans* are mainly northern South America; *A. hirta*, *A. tessellata*, *A. zoncensis*, *A. trapezoidalis* and *A. nigrorittata* occur from Mexico or Panama to eastern or southern Brazil (Map 2). Few collections were available from Argentina, which accounts for the lack of records. *Achacaranca trinidadensis* is known from Trinidad and Peru, *A. pentagona* from Guianas and Peru (Map 2). Three species have been collected along the Brazilian coast (*A. altiventer*, *A. cinnabarina*, and *A. bellula*) and thirty-six species are endemic or rare and are known from only few records: two from Guianas and northwestern Brazil, two from Venezuela, one from Venezuela and Colombia, two from Colombia and Ecuador, one from

Map 2. Distribution of some Mexican, Central and widespread South American *Acharanea* species.

eastern Brazil, eleven from Ecuador and Peru, fifteen from southeastern and southern Brazil to Paraguay, and two from Chile.

Misplaced species.

Achaea acutiventer Keyserling = *Coleosoma acutiventer* (Keyserling)

Achaea compressa Keyserling = *Chrysso compressa* (Keyserling)

Achaea crocea O. P.-Cambridge = *Dipoena crocea* (O. P.-Cambridge)

Achaea pulchra Keyserling = *Chrysso pulchra* (Keyserling)

Achaea signata Keyserling = *Chrysso pulchra* (Keyserling)

Achaea vittata O. P.-Cambridge = *Chrysso vittata* (O. P.-Cambridge)

Unknown species.

Achaea hieroglyphica Mello-Leitão, 1941, Arq. zool. São Paulo, 2: 202. Female holotype from Colatina, Espírito Santo, Brazil, in the Museo Nacional, Rio de Janeiro, was not available for examination. The species was described without illustration of the genitalia.

Unrecognizable species.

Theridion coniferum Blackwall, 1862, Ann. Mag. Nat. Hist., (3) 10: 429. Type from Rio de Janeiro, lost.

Achaea quadripunctata Simon, 1895, Ann. Soc. ent. France, 64: 145. Male type from Caraca, Minas Gerais, Brazil, lost.

In the keys, references to "Fig." indicate illustrations in this paper, while "1955, fig." and "1959, fig." indicate that the illustration was published in my previous papers on *Achaearana*.

Key to female *Achaearana*

- 1a. Abdomen with two humps (1959, fig. 8), Mexico . . . *hermosillo* Levi
- 1b. Abdomen without humps or with one hump 2
- 2a. Abdomen longer than wide or high (1955, fig. 9; Fig. 4) 3
- 2b. Abdomen usually higher than long or subspherical 5
- 3a. Spinnerets closer to pedicel than to posterior tip (Fig. 100); southeastern Brazil *isana* sp. n.
- 3b. Spinnerets closer to posterior tip than to pedicel (Fig. 4) 4
- 4a. Depression of epigynum with a posterior sclerotized rim (1955, fig. 8); Central to South America *trapezoidalis* (Taczanowski)
- 4b. Depression of epigynum with anterior rim only (Fig. 6); Peru *tingo* sp. n.
- 5a. Epigynum with two sclerotized disks in one or two lighter areas (1959, figs. 19, 21, 23, 68; Fig. 106) 6

- 5b. Epigynum otherwise 10
- 6a. Two sclerotized disks in a median light area (1959, fig. 68); Mexico ..
nayaritensis Levi
- 6b. Each sclerotized disk in its own suboval light area (1959, figs. 19, 21,
 23; Fig. 106) 7
- 7a. Seminal receptacles separated more than their diameter (Fig. 105);
 Paraguay *rapa* sp. n.
- 7b. Seminal receptacles almost touching 8
- 8a. Light areas of epigynum large (1959, fig. 23); Mexico *serax* Levi
- 8b. Light areas smaller (1959, figs. 19, 21) 9
- 9a. Total length 2.6-4.7 mm; Mexico, Panama, West Indies
florens (O. P.-Cambridge)
- 9b. Total length 1.8-2.6 mm; Texas to Venezuela *florendida* Levi
- 10a. Epigynum with two dark spots or patches side by side (Figs. 27, 38) 11
- 10b. Epigynum otherwise 18
- 11a. Dark spots their diameter or less apart 12
- 11b. Dark spots one and one-half or more diameters apart 15
- 12a. Spots their diameter apart, connected anteriorly (Fig. 27); southern
 Brazil *passiva* (Keyserling)
- 12b. Spots otherwise 13
- 13a. Posterior border of epigynum with a lip; spots not circular (1959, fig.
 43); Mexico *pura* (O. P.-Cambridge)
- 13b. Posterior border without lip; spots circular 14
- 14a. Southeastern Brazil *riocensis* sp. n.
- 14b. Guatemala, Venezuela to Peru *taeniata* (Keyserling)
- 15a. Dark spots separated by a short median scape (1959, fig. 28); Mexico ..
manzanillo Levi
- 15b. No median scape present 16
- 16a. Venter of abdomen with a median white patch (1955, fig. 59); Arizona
chiricahua Levi
- 16b. Venter of abdomen otherwise 17
- 17a. Eastern United States (1955, figs. 47-49) *rupicola* (Emerton)
- 17b. Western United States *fresno* Levi
 and *canionis* (Chamberlin and Gertsch)
- 18a. Epigynum with ducts visible as two longitudinal dark stripes, almost
 parallel (Figs. 78, 80, 82, 85) 19
- 18b. Epigynum otherwise 20
- 19a. Epigynum little swollen behind, posterior border straight (Figs. 78,
 80, 82); widespread South America *migrans* (Keyserling)
- 19b. Epigynum swollen, posterior border rounded (Fig. 85); Ecuador
pilaton sp. n.
- 20a. Epigynum with a pair of openings, each partially covered medially by a
 membrane (1959, fig. 55); atria thin-walled and cone-shaped (1959, fig.
 54) Mexico, West Indies to Paraguay *nigrovittata* (Keyserling)
- 20b. Epigynum, genitalia otherwise 21
- 21a. Epigynum with two transverse raised areas (1959, fig. 62); Central
 America *oblivia* (O. P.-Cambridge)

21b.	Epigynum otherwise	22
22a.	Epigynum with large oval transverse opening on a swelling (Fig. 15); Ecuador	<i>milagro</i> sp. n.
22b.	Epigynum otherwise	23
23a.	Epigynum with posterior swelling or boss, or if relatively flat, opening far anterior	46
23b.	Epigynum without posterior swelling or boss and with openings center or posterior	24
24a.	Two openings or depressions separated by septum (Figs. 87, 88); Brazil	<i>bellula</i> (Keyserling)
24b.	Epigynum otherwise	25
25a.	Epigynum with a central dark spot (Fig. 94); southern Brazil, Uruguay	<i>pingue</i> (Keyserling)
25b.	Epigynum otherwise	26
26a.	Epigynum opening a transverse slit, the posterior rim of an anterior depression (1959, figs. 36, 48; Fig. 69)	27
26b.	Epigynum otherwise	29
27a.	Ducts visible on each side of depression and separating from each other anteriorly (Fig. 69); Chile	<i>chilensis</i> sp. n.
27b.	Ducts otherwise	28
28a.	Ducts looping anterior to seminal receptacles (1959, figs. 46, 47); Panama, West Indies	<i>maricaoensis</i> (Bryant)
28b.	Ducts loop posterior to seminal receptacles (1959, fig. 35); Panama to Paraguay	<i>hirta</i> (Taczanowski)
29a.	Central opening small, diameter less than radius of seminal receptacles	30
29b.	Central opening or depression large, diameter more than two-thirds longer than diameter of seminal receptacles	34
30a.	Opening more than four diameters from posterior border of epigynum	31
30b.	Opening less than two diameters from posterior border	32
31a.	Opening with sclerotized rim (Fig. 99); southern Brazil	<i>jequiritiba</i> sp. n.
31b.	Opening without rim (1959, fig. 31); Lesser Antilles	<i>trinidensis</i> Levi
32a.	Ducts swollen (Fig. 30); southern Brazil	<i>quadrupartita</i> (Keyserling)
32b.	Ducts of even diameter	33
33a.	Duct loops some distance from posterior margin (Fig. 22); epigynum lightly sclerotized (Fig. 23); southeastern Brazil	<i>vidua</i> (Keyserling)
33b.	Duct loops almost touching posterior margin (Fig. 24); epigynum heavily sclerotized (Fig. 25); eastern Brazil	<i>barra</i> sp. n.
34a.	Central depression only with anterior border (Fig. 3); ducts coiled (Fig. 2); French Guiana, Peru	<i>pentagona</i> (Caporiacco)
34b.	Epigynum otherwise	35
35a.	Depression with anterior median dark marks (Fig. 17); Ecuador, Peru	<i>dromedariforma</i> (Roewer)
35b.	Epigynum otherwise	36

- 36a. Depression enclosing two dark spots and having narrow sclerotized posterior rim (1959, fig. 33); Panama, Peru, eastern Brazil *zonensis* Levi
- 36b. Epigynum otherwise 37
- 37a. Duct with tight coil on each side of depression (1955, fig. 71); eastern United States to Panama, West Indies *porteri* (Banks)
- 37b. Ducts without tight coil 38
- 38a. Narrow duct with loose coil on each side of depression (Figs. 18, 19); southern Brazil *maxima* (Keyserling)
- 38b. Ducts otherwise 39
- 39a. Depression bordered only on posterior half (Fig. 12) and portion of duct transverse between seminal receptacles and wall of epigynum (Figs. 10, 11); southern Brazil to Paraguay... *altiventer* (Keyserling)
- 39b. Depression and ducts otherwise 40
- 40a. Back of atrium and wide ducts heavily sclerotized (1955, fig. 69); cosmopolitan *tepidarium* (C. L. Koeh)
- 40b. Back of depression not heavily sclerotized 41
- 41a. Posterior rim of depression coiled on each side (1955, fig. 77); abdomen with dorsal hump (1955, fig. 78); Florida, Alabama *sereñoae* (Gertsch and Archer)
- 41b. Rim of depression otherwise 42
- 42a. A rim posterior of depression (Fig. 8); Utah *ambra* sp. n.
- 42b. Epigynum otherwise 43
- 43a. Depression heart-shaped (1959, fig. 25); Costa Rica *sehraderorum* Levi
- 43b. Epigynum otherwise 44
- 44a. Ducts entering seminal receptacles on sides (1959, figs. 57, 59, 70); ducts often black; Mexico to southeastern Brazil *tesselata* (Keyserling)
- 44b. Ducts otherwise 45
- 45a. Ducts with a loop (Fig. 20); Chile *lota* sp. n.
- 45b. Ducts straight (Fig. 34); Colombia *caliensis* sp. n.
- 46a. Epigynum with two openings 47
- 46b. Epigynum with one opening 54
- 47a. Opening on each side of swelling (1959, fig. 65); Mexico to Costa Rica *rostrata* (O. P.-Cambridge)
- 47b. Opening on anterior face of swelling or anterior to swelling 48
- 48a. Openings anterior to swelling (1955, figs. 15, 37) 49
- 48b. Openings on anterior face of swelling (1955, figs. 21, 44; Figs. 51, 97) 50
- 49a. Swelling indistinct (1955, fig. 37); abdomen with dark pigment (1955, fig. 38); Florida, California to Mexico... *schullei* (Gertsch and Mulaik)
- 49b. With swelling (1955, fig. 15); abdomen mainly whitish (1955, fig. 18); southeastern U. S. *conjuncta* (Gertsch and Mulaik)
- 50a. Openings more than four diameters apart (1955, fig. 21); posterior of abdomen white with a black patch (1955, fig. 19); eastern U. S. to northeastern Mexico *globosa* (Hentz)
- 50b. Openings about two diameters or less apart 51
- 51a. Median area of swelling light (1959, fig. 15); Jamaica *anna* Levi

51b. Epigynum otherwise	52
52a. Openings separated by a narrow septum (1955, figs. 43, 44); Texas, northern Mexico	<i>insulsa</i> (Gertsch and Mulaik)
52b. Epigynum otherwise	53
53a. Swelling extending posterior (Fig. 97); southeastern Brazil	<i>eramus</i> sp. n.
53b. Swelling slight, not extending posterior (Fig. 92); Venezuela, Colombia	<i>alacre</i> (Keyserling)
54a. California; genitalia as in 1955, figures 39, 40	<i>acorensis</i> (Berland)
54b. West Indies, Central or South America	55
55a. Seminal receptacles separated by more than one diameter (1959, fig. 1); opening with sclerotized anterior rim (1959, figs. 2, 3); Cuba	<i>turquino</i> Levi
55b. Seminal receptacles two-thirds their radius or less apart, opening otherwise; Central and South America	56
56a. Opening almost square, posterior to it a dark shadow (Fig. 56); Peru	<i>leguii</i> (Chamberlin)
56b. Epigynum otherwise	57
57a. Ducts elbowed (Fig. 65); Peru	<i>koepckei</i> sp. n.
57b. Ducts without elbows	58
58a. Abdomen very short (Fig. 59); ducts fine, length equal to larger radius of seminal receptacles (Fig. 57); Venezuela	<i>anastema</i> sp. n.
58b. Abdomen longer; ducts thicker or shorter	59
59a. Epigynum bulging posterior (Fig. 51), ducts heavily sclerotized, longer than diameter of seminal receptacles (Fig. 50); Peru	<i>kaspi</i> sp. n.
59b. Epigynum otherwise, ducts much shorter	60
60a. Opening very large, its diameter from posterior rim	61
60b. Opening smaller, one and one-half diameters from posterior rim	62
61a. Atrial wall heavily sclerotized (Fig. 60); Ecuador	<i>banosensis</i> sp. n.
61b. Atrial wall otherwise (Figs. 70, 71); southeastern Brazil	<i>sicki</i> sp. n.
62a. Swelling projecting, ventrally (Figs. 53, 54); Peru	<i>gigantea</i> (Keyserling)
62b. Swelling less distinct	63
63a. Abdomen orange with white lines; genitalia as in Figures 62, 63; southeastern Brazil	<i>cinnabarina</i> sp. n.
63b. Abdomen colored otherwise	64
64a. Abdomen whitish with well-defined black spots (Fig. 72); genitalia as in Figures 73, 74; southern Brazil	<i>analista</i> sp. n.
64b. Abdomen with stripes	65
65a. Less than 2 mm total length; Panama	<i>apex</i> Levi
65b. More than 4 mm total length; Colombia	<i>equiza</i> sp. n.

Key to male *Achaearanea*

- 1a. Ectal side of cymbium supporting embolus coil (1955, figs. 11-13);
South America
- trapezoidalis* (Taczanowski)

- 1b. Cymbium otherwise 2
- 2a. Embolus or conductor extending distally beyond cymbium 3
- 2b. Embolus or conductor not extending beyond cymbium 21
- 3a. Conductor with an ectal spur (1955, fig. 53); California *fresno* Levi
- 3b. Conductor without spur 4
- 4a. Embolus width almost half that of tegulum, embolus with a seam (1955, fig. 83); cosmopolitan *tepidariorum* (C. L. Koch)
- 4b. Embolus otherwise 5
- 5a. Conductor position transverse to axis of cymbium 6
- 5b. Conductor position nearly parallel to cymbium axis 7
- 6a. Conductor with a long ectal extension (1959, fig. 51); Panama *machaera* Levi
- 6b. Conductor otherwise (1959, figs. 49, 50); Puerto Rico, Panama *maricaoensis* (Bryant)
- 7a. Embolus with a whip-like distal portion; United States 8
- 7b. Embolus otherwise; United States to South America 9
- 8a. Whip portion of embolus equal to cymbium in length (1955, fig. 79); Alabama, Florida *serenoae* (Gertsch and Archer)
- 8b. Whip portion of embolus longer than cymbium (1955, figs. 80-81); eastern United States to Panama, West Indies *porteri* (Banks)
- 9a. Embolus and conductor confined to mesal half of tegulum 10
- 9b. Embolus, conductor otherwise 15
- 10a. Cymbium with a distal spine (Figs. 39, 40); Arizona *chiricahua* Levi
- 10b. Cymbium otherwise 11
- 11a. Embolus bifurcate (Fig. 48); southeastern Brazil *sicki* sp. n.
- 11b. Embolus otherwise 12
- 12a. Embolus base near base of tegulum (1959, fig. 44); Mexico *pura* (O. P.-Cambridge)
- 12b. Embolus base in distal half of tegulum 13
- 13a. Base of embolus broad and flat (1955, figs. 60-62); Utah, California *canionis* (Chamberlin and Gertsch)
- 13b. Base of embolus otherwise 14
- 14a. Abdomen longer than wide, embolus cone-shaped (Fig. 113); southern Brazil *isana* sp. n.
- 14b. Abdomen otherwise; palpus otherwise (Fig. 112); Ecuador *orana* sp. n.
- 15a. Embolus a broad sclerite (1959, fig. 29); Trinidad *trinidadensis* Levi
- 15b. Embolus otherwise 16
- 16a. Embolus seemingly U-shaped, or embolus on ectal side of tegulum (1959, figs. 52, 56; Figs. 109, 110) 17
- 16b. Embolus straight or on mesal side of tegulum 19
- 17a. Embolus on mesal side of tegulum (1959, fig. 52); Cuba, Panama *terex* Levi
- 17b. Embolus reaching ectal side of tegulum 18
- 18a. Embolus clearly U-shaped (1959, fig. 56; Fig. 110) Mexico, West Indies to Paraguay *nigrorittata* (Keyserling)
- 18b. Embolus otherwise (Fig. 109); Costa Rica *micratula* (Banks)

- 19a. Duct with loop in tegulum (Fig. 33); eastern and southern Brazil
quadripartita (Keyserling)
- 19b. Duct otherwise 20
- 20a. Embolus with a neck and wide distal portion as in Figure 111; French Guiana
pussilana (Roewer)
- 20b. Embolus otherwise (Fig. 108); Ecuador *milagro* sp. n.
- 21a. Embolus U-shaped, cymbium rounded above as in Figure 103; Paraguay
rapa sp. n.
- 21b. Embolus otherwise 22
- 22a. Embolus a broad cone or spine on tegulum, not a separate sclerite 23
- 22b. Embolus not cone-shaped and always a separate sclerite 29
- 23a. Embolus with two tips 24
- 23b. Embolus with one tip 25
- 24a. Cymbium with stout tip (1959, fig. 17); Texas to Venezuela
florencia Levi
- 24b. Cymbium with slender tip (1959, fig. 16); Cuba, Mexico to Panama
florens (O. P.-Cambridge)
- 25a. Cymbium with tip hooked; duct in tegulum with elbow below embolus (1959, fig. 12); Panama *apex* Levi
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- 26a. In ventral view, duct below embolus describing half circle 27
- 26b. In ventral view, duct below embolus going toward base on ectal side with slight undulation before looping back toward distal and dorsal side of tegulum 28
- 27a. Abdomen with two humps; distal end of cymbium broad (1959, figs. 6, 7); Mexico *hermosillo* Levi
- 27b. Abdomen without humps; distal end of cymbium narrow (1955, figs. 16, 17); southeastern United States *conjuncta* (Gertsch and Mulaik)
- 28a. Distal end of cymbium broad (1959, fig. 13); Jamaica *anna* Levi
- 28b. Distal end of cymbium narrow (1955, figs. 22-25); eastern United States *globosa* (Hentz)
- 29a. Duct with S-shaped loop in tegulum; Central, South America 30
- 29b. Ducts not looping in an S or, if S-shaped, found in North America 31
- 30a. Embolus reaching almost to base of tegulum (1959, fig. 37); Panama to Paraguay *hirta* (Taczanowski)
- 30b. Embolus shorter (Fig. 41); Minas Gerais *diamantina* sp. n.
- 31a. In ventral view two duct loops in tegulum as in Figure 45; southern Brazil, Paraguay *altiventer* (Keyserling)
- 31b. Duct loops otherwise 32
- 32a. Duct with a long distally directed loop (Figs. 42, 46) 33
- 32b. No loop present or only a slight wave in course of duct 34
- 33a. Distal portion of embolus broad (Fig. 42); eastern Brazil *parana* sp. n.
- 33b. Distal portion of embolus narrow (Fig. 46); southeastern Brazil
cinnabarina sp. n.
- 34a. Embolus a small transparent squarish sclerite on meso-ventral face of bulb (1955, figs. 33, 35); Florida, California, Mexico
schullei (Gertsch and Mulaik)

- 34b. Embolus shaped otherwise and extending distally beyond tegulum . . . 35
- 35a. Embolus with a spur (Fig. 29); Venezuela *torarensis* sp. n.
- 35b. Embolus otherwise 36
- 36a. Embolus with an almost straight (in ventral view) filiform distal portion, longer than tegulum diameter (1959, fig. 26); Panama
schneirlai Levi
- 36b. Embolus otherwise 37
- 37a. Distal knob of cymbium wider than immediate portion below 38
- 37b. Distal tip of cymbium without neck 39
- 38a. Length of cymbium portion distal to alveolus equal to tegulum diameter (Fig. 44); Peru *aviana* sp. n.
- 38b. Cymbium extending only slightly beyond tegulum (1959, fig. 34); Panama *zonensis* Levi
- 39a. Cymbium tip with a thumb on ectal side (1959, fig. 41); Guatemala to Venezuela *taeniata* (Keyserling)
- 39b. Cymbium tip otherwise 40
- 40a. Cymbium tip with three lobes (Fig. 43); Guiana *inops* sp. n.
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ACHAEARANEA TRAPEZOIDALIS (Taczanowski)

Map 2

Argyrodes trapezoidalis Taczanowski, 1873, Horae Soc. Ent. Rossicae, 9: 115, pl. 5, fig. 10. Female and male syntypes from Uassa [Rio Uaça, Amapa, Brazil] and Cayenne, French Guiana, in the Polish Academy of Sciences, Warsaw.

Achaea insignis O. P.-Cambridge, 1882, Proc. Zool. Soc. London, p. 428, pl. 30, fig. 5, ♂. Male holotype from the Amazon in the Hope Department of Entomology, Oxford.

Thwaitesia diversa O. P.-Cambridge, 1882, *ibid.*, p. 432, pl. 31, fig. 8, ♀. Female holotype from the Amazon in the Hope Department of Entomology, Oxford.

Achaearana trapezoidalis, — Levi, 1955, Amer. Mus. Novitates, no. 1718: 9, figs. 7-13, ♀, ♂; 1959, Bull. Mus. Comp. Zool. 121: 76.

Distribution. Panama to Paraguay (Map 2).

Additional Records. *Trinidad:* Balandra Bay (Reynolds). *Venezuela.* *Delta Amauro:* Río Orinoco delta, Jan.-Feb. 1935 (N. Weber). *Peru.* *San Martín:* Moyobamba, 20 Dec. 1946 (J. C. Pallister, AMNH). *Huánuco:* Monzón Valley, Tingo María, Nov. 1954 (E. I. Schlinger, E. S. Ross, CAS). *Brazil.* *Pará:* Belém, Feb. 1959 (A. M. Nadler, AMNH), doubtful determination. *Paraguay.* *Alto Paraná:* Taquararapa (AMNH).

ACHAEARANEA PENTAGONA (Caporiacco), new combination

Figures 1-3

Chrysso pentagona Caporiacco, 1954, Comm. Pontificia Acad. Sci., 16: 75, fig. 12, ♀. Female holotype from Goudronville, French Guiana, in the Muséum National d'Histoire Naturelle, Paris, examined.

This species is very close to *A. trapezoidalis*. The abdomen of the type, from which Figure 1 was made, is shrunken. In other specimens the middle constriction of the abdomen is less pronounced or absent. The species differs by lacking the posterior lip of the epigynum depression (Fig. 3) and by the position of the coil (Fig. 2). The abdomen is shorter than that of *A. trapezoidalis* and *A. tingo*. The illustrations were made from the holotype.

Records. *Peru.* *Huánuco:* Monzón Valley, Tingo María, Oct., Nov., 1954 (E. I. Schlinger, E. S. Ross, CAS); Santa Teresa, Río Huallaga, 600 m, Aug. 1954 (F. Woytkowski); Cucharas, Huallaga Valley, Feb., April 1954 (F. Woytkowski).

ACHAEARANEA TINGO sp. n.

Figures 4-6

Type. Female holotype from Tingo María, Huánuco, Peru, 19-25 May 1947 (J. C. Pallister), in the American Museum of Natural History. The specific name is a noun in apposition after the type locality.

Description. The whole spider is light orange in color except for a black spot in center of sternum. Anterior median eyes slightly larger than others, two-thirds diameter apart, their radius from laterals. Posterior median eyes a little more than their diameter apart, their diameter from laterals. Abdomen longer than high (Fig. 4). Total length 2.3 mm. Carapace 1.14 mm long, 0.91 mm wide. First femur, 2.20 mm; patella and tibia, 2.16 mm; metatarsus, 1.82 mm; tarsus, 0.78 mm. Second patella and tibia, 1.22 mm; third, 0.80 mm; fourth, 1.49 mm.

Diagnosis. Like *A. pentagona*, *A. tingo* lacks the posterior lip of the depression in the epigynum (Fig. 6) which is present in *A. trapezoidalis*. The depression is smaller than in the preceding two species and the duct coil relatively larger (Fig. 5).

ACHAEARANEA GLOBOSA (Hentz)

Map 1

Theridion globosum Hentz, 1850, Jour. Boston Soc. Nat. Hist., 6: 279, pl. 9, fig. 23, ♀. Types from Alabama lost.

Achacaranea globosa, — Levi, 1955, Amer. Mus. Novitates, no. 1718: 9, figs. 19-25, ♀, ♂.

Distribution. Eastern United States to Veracruz, Mexico (Map 1).

Additional records. *Minnesota.* Winona Co.: Whitewater State Park (H. Levi). *Texas.* San Patricio Co.: SW of Mathis (R. O. Albert).

ACHAEARANEA SCHULLEI (Gertsch and Mulaik)

Map 1

Theridion schullei Gertsch and Mulaik, 1936, Amer. Mus. Novitates, no. 863: 15, fig. 22, ♀. Female type from Edinburg, Texas, in the American Museum of Natural History.

Achacaranea schullei, — Levi, 1955, *ibid.*, no. 1718: 17, figs. 32-38, ♀, ♂; 1959, Bull. Mus. Comp. Zool. 121: 61.

Distribution. Florida, Texas, Mexico (Map 1).

Additional records. *Texas.* Dallas Co.: Dallas, woods at California Crossing in log, 26 May 1940, ♀ (H. Knutsen). *Arizona.* Pima Co.: Tucson, 730 m, on outside of building, 6 Sept. 1959, ♀ (J. Beatty); Twin Buttes Mine, 1000 m, in web over crevice in roof of tunnel, 30 July 1960, ♂ (J. Beatty).

ACHAEARANEA AMBERA sp. n.

Figures 7-8

Type. Female holotype, from Mill Creek Canyon, Salt Lake City, Salt Lake Co., Utah (R. V. Chamberlin), in the American Museum of Natural History. The specific name is an arbitrary combination of letters.

Description. Carapace brownish. Sternum brown. Legs yellowish. Abdomen with a dorsal white stripe from hump to anal tubercle. The stripe is crossed by a wide line, and has light patches on each side. Eyes subequal in size. Anterior median eyes one diameter apart, almost touching laterals. Posterior median eyes one diameter apart, a little more than one diameter from laterals. Abdomen with a hump. Total length 2.0 mm. Carapace 0.78 mm long, 0.78 mm wide. First femur, 1.30 mm; patella and tibia, 1.32 mm; metatarsus, 1.00 mm; tarsus, 0.52 mm. Fourth patella and tibia, 0.60 mm.

Diagnosis. Unlike other *Achaearana* species, *A. ambara* has the epigynum with a lip parallel to the posterior border (Fig. 8).

ACHAEARANEA ALTIVENTER (Keyserling), new combination

Figures 9-12, 45; Map 2

Achaea altiventer Keyserling, 1884, Die Spinnen Amerikas, Theridiidae, 2(1): 108, pl. 5, fig. 70, ♀. Juvenile female holotype from "Süd. Amerika," in the Hope Department of Entomology, Oxford University, examined.

Theridion altiventer,—Simon, 1894, Histoire Naturelle des Araignées, 1: 535.

Note. The type specimen is a juvenile female just before the final molt. Luckily the internal ducts are sufficiently sclerotized to leave no doubt about its placement, as the characteristic transverse portions of the ducts can be seen.

Description. Carapace yellow with a median dusky area. Sternum dusky. Legs yellow with dusky bands. Abdomen with a black dorsal, longitudinal, median band that is bordered by white; several dark and light stripes on side (Fig. 9); venter with a black mark anterior to spinnerets and a black line connecting this mark with genital groove; on each side of dark line is a white spot. Eyes subequal in size, anterior median eyes a little more than one diameter apart, their radius from laterals. Posterior eyes their diameter apart. Chelicerae without teeth. Abdomen with a hump. Total length of female from Paraguay 5.6 mm. Carapace 1.6 mm long, 1.3 mm wide. First femur, 4.1

mm; patella and tibia, 3.6 mm; metatarsus, 3.5 mm; tarsus, 1.0 mm. Second patella and tibia, 2.0 mm; third, 1.0 mm; fourth, 2.3 mm. Total length of male 2.8 mm. Carapace 1.4 mm long, 1.2 mm wide. First femur, 2.2 mm; patella and tibia, 2.3 mm; metatarsus, 2.2 mm; tarsus, 0.8 mm. Second patella and tibia, 1.3 mm; third, 0.9 mm; fourth, 1.3 mm.

Distribution. Southern and southeastern Brazil (Map 2).

Records. *Brazil.* *Pernambuco:* Recife (SMF). *Guanabara:* Teresópolis, March 1946, 900-1000 m, ♀ (H. Sick, AMNH). *São Paulo:* Pinhal, Dec. 1948 (A. Maller, AMNH); Jequirituba, 750 m, Cidade de São Paulo, Dec. 1945, ♀, ♂ (H. Sick, AMNH). *Santa Catarina:* Nova Teutonia, lat 27°11'S, long 52°23'W (F. Plaumann, SMF). *Paraguay.* 1891, 1893, 3 ♀ (Dr. Bohls, BMNH); ♂ (Germain, MNHN).

ACHAEARANEA MAXIMA (Keyserling), new combination

Figures 18-19

Achaea maxima Keyserling, 1891, Die Spinnen Amerikas, Brasilianische Spinnen, 3: 198, pl. 7, fig. 142, ♀. Female holotype from Rio Grande [do Sul], Brazil, in the British Museum, examined.

Theridion maximum,—Simon, 1894, Histoire Naturelle des Araignées, 1: 535.

The illustrations were made from the type specimens.

ACHAEARANEA DROMEDARIFORMA (Roewer), new combination

Figures 16-17

Achaea dromedaria Keyserling, 1884, Die Spinnen Amerikas, Theridiidae, 2(1): 109, pl. 5, fig. 71, ♀. Female holotype from Lechugal, [Tumbes], Peru, in the Polish Academy of Sciences, Warsaw, examined. Not *Theridion dromedarium* Simon, 1880, which may also be an *Achaearana*.

Theridion dromedarius,—Simon, 1894, Histoire Naturelle des Araignées, 1: 535. Not *Theridion dromedarium* Simon, 1880.

Theridion dromedariforme Roewer, 1942, Katalog der Araneae, 1: 491. New name for *Theridion dromedaria* (Keyserling), thought to be preoccupied.

This small light-colored species usually has a hump on the abdomen. Specimens from Quebrada Mogollón lack the hump. The epigynum has a large, shallow, oval depression with two anterior spots (Fig. 17). The illustrations were made from the holotype.

Records. *Ecuador.* *Guayas:* Coloneche, 1941 (R. W. Landes). *Peru.* *Piura:* Quebrada Mogollón, 18 June 1939 (H. E., D. L. Frizzell).

ACHAEARANEA LOTA sp. n.

Figures 20-21

Type. Female holotype from Lota, Concepción, Chile, in the Muséum National d'Histoire Naturelle, Paris (no. 10355). The specific name is a noun in apposition after the type locality.

Description. Carapace, sternum, legs brown. Dorsum of abdomen with broad black stripes going down sides and small white pigment spots like *A. koepekei* (Fig. 64). Venter with two black spots behind epigastric groove and two black spots anterior to spinnerets; there is a semicircular black mark on each side of pedicel. Anterior median eyes slightly larger than others, two-thirds their diameter apart, less than one-quarter from laterals. Posterior eyes less than their diameter apart. Total length 4.0 mm. Carapace 1.6 mm long, 1.4 mm wide. First femur, 2.9 mm; patella and tibia, 3.0 mm; metatarsus, 2.2 mm; tarsus, 0.8 mm. Second patella and tibia, 2.1 mm; third, 1.4 mm; fourth, 2.2 mm.

Diagnosis. The depression of the epigynum (Fig. 21) is of different shape than that of *A. chilensis* and the ducts are shorter (Fig. 20).

Records. Four paratypes collected with holotype.

ACHAEARANEA VIVIDA (Keyserling), new combination

Figures 22-23

Theridium vividum Keyserling, 1891, Die Spinnen Amerikas, Brasilianische Spinnen, 3: 192, pl. 7, fig. 139, ♀. Female holotype from Espírito Santo on the Rio Minas [?], Brazil, in the British Museum, examined.

This species has a pair of ventral white spots, side by side on the abdomen. The illustrations were prepared from the holotype.

ACHAEARANEA BARRA sp. n.

Figures 24-25

Type. Female holotype from San Antonio da Barra [Condeúba, Bahia] Brazil (E. Gounelle), in the Muséum National d'Histoire Naturelle, Paris (no. 11520). The specific name is a noun in apposition after the type locality.

Description. Carapace orange-brown, black in head region. Sternum orange. Legs yellowish white with faint indications of wide bands. Abdomen black, dorsum with a light median longitudinal line, wide anteriorly and narrow above spinnerets.

Descending on each side a short anterior light line and a longer line posteriorly. Venter behind the epigynum with a white patch, longer than wide. Anterior median eyes slightly larger than others, their radius apart, their radius from laterals. Posterior median eyes three-quarters their diameter apart, a little more than their diameter from laterals. Chelicerae with one tooth on anterior margin. Abdomen higher than long without tubercle. Total length 2.2 mm. Carapace 0.96 mm long, 0.85 mm wide. First femur, 1.17 mm; patella and tibia, 1.20 mm; metatarsus, 0.81 mm; tarsus, 0.58 mm. Second patella and tibia, 1.0 mm; third, 0.75 mm; fourth, 1.09 mm.

Diagnosis. The winding internal ducts separate this species from *A. vivida* (Keyserling) and most other *Achaearana*. The ducts (Fig. 24) are weakly sclerotized.

ACHAEARANEA PASSIVA (Keyserling), new combination

Figures 26-28

Theridium passivum Keyserling, 1891, Die Spinnen Amerikas, Brasilianische Spinnen, 3: 195, pl. 7, fig. 141, ♀. Female holotype from Fazenda Calvario, Est. Rio de Janeiro [Guanabara], Brazil, in the British Museum, examined.

Note. Chamberlin and Ivie (1934, Bull. Univ. Utah, biol. ser., 2(4): 11) placed this species in *Tidarren*. This apparently was done without examining specimens.

Description. Carapace of male yellow with a gray median longitudinal band enclosing head region in front, narrow behind and bordered with gray. Sternum yellow with a dark spot opposite each coxa. Legs yellow. Abdomen of male with a pair of zig-zag lines on dorsum, a white line above spinnerets, and irregular gray marks; venter with a pair of white spots side by side on a dark background. Female quite variable, but less distinctly marked, usually with area posterior to spinnerets gray. Anterior median eyes slightly larger than others in male, subequal in female; two-thirds their diameter apart, almost touching laterals. Posterior median eyes one diameter apart, two-thirds diameter from laterals in male; all posterior eyes two-thirds diameter apart in female. Total length of male 2.2 mm. Carapace 0.92 mm long, 0.84 mm wide. First femur, 1.98 mm; patella and tibia, 1.98 mm; metatarsus, 2.08 mm; tarsus, 0.81 mm. Second patella and tibia, 1.20 mm; third, 0.75 mm; fourth, 1.17 mm.

Figures 26, 27 were prepared from the holotype.

Diagnosis. The palpal cymbium of this species has two prongs at its tip (Fig. 28), the duct is simple, and the embolus squarish. The epigynum has an indistinct dark area anterior to an indistinct light depression (Fig. 27).

Records. *Brazil.* *Guanabara:* Teresópolis, Nov. 1945, March 1946 (H. Sick, AMNH); Petrópolis, Nov. 1945 (H. Sick, AMNH). *São Paulo:* Ribeirão Pires, Dec. 1945 (H. Sick, AMNH); Jequirituba, Cidade São Paulo, Dec. 1945 (H. Sick, AMNH). *Santa Catarina:* Nova Teutonia, lat 27°11'S, long 52°23'W (F. Plaumann, SMF).

ACHAEARANEA QUADRIPARTITA (Keyserling), new combination
Figures 30-33

Theridium quadripartitum Keyserling, 1891, *Die Spinnen Amerikas, Brasilianische Spinnen*, 3: 182, pl. 6, fig. 127. Female, male syntypes from Botucatu, São Paulo, Brazil, in the British Museum, examined.

Description. Specimen from Minas Gerais. Carapace orange; black between eyes. Sternum, legs, orange. Abdomen orange-white, darker orange on venter; dorsum with four large black patches separated by a white line on each side and a line above spinnerets (Fig. 32). Anterior median eyes slightly smaller than others, one and one-half diameters apart, one-quarter diameter from laterals. Posterior median eyes three-quarters diameter apart, one diameter from laterals. Chelicerae with one tooth on anterior margin. Total length of female 2.0 mm. Carapace 0.9 mm long, 0.8 mm wide. First femur, 1.0 mm; patella and tibia, 1.0 mm; metatarsus, 0.6 mm; tarsus, 0.5 mm. Second patella and tibia, 0.9 mm; third, 0.7 mm; fourth, 1.0 mm.

The connecting ducts are widened in one place (Fig. 30); the palpal duct is fine and looping. The illustrations were prepared from the syntypes.

Records. *Brazil.* *Minas Gerais:* Caraga, ♀ (E. Gounelle, MNHN). *Santa Catarina:* Nova Teutonia, lat 27°11'S, long 52°23'W, ♀, ♂ (F. Plaumann, SMF).

ACHAEARANEA CALIENSIS sp. n.
Figures 34-35

Type. Female holotype from 21 km west of Cali, Valle, Colombia, 20 March 1955 (E. I. Schlinger, E. S. Ross), in the California Academy of Sciences. The species is named after the type locality.

Description. Carapace dark gray-brown. Sternum red-brown. Legs yellow-white with black patches on venter and black rings on distal ends of segments. Abdomen with typical irregular patches and jagged white lines down sides; venter dark with a pair of discrete white spots side by side. Anterior median eyes slightly larger than others, their diameter apart, one-quarter diameter from laterals. Posterior median eyes their diameter apart, almost one diameter from laterals. Abdomen higher than long without tubercle. Total length 3.0 mm. Carapace 1.2 mm long, 1.0 mm wide. First femur, 1.9 mm; patella and tibia, 1.8 mm; metatarsus, 1.5 mm; tarsus, 0.7 mm. Second patella and tibia, 1.1 mm; third, 0.9 mm; fourth, 1.4 mm.

Diagnosis. Two openings are in a small depression near the posterior rim of the epigynum depression (Fig. 35). The connecting ducts are short (Fig. 34). The position of the openings in the depression separate this species from other *Achaearana*. The coloration and larger size separate it from *A. zonensis*.

Record. Ecuador. *Pichincha*: 10 km W of Santo Domingo de los Colorados, 23 Feb. 1955, ♀ (E. I. Schlinger, E. S. Ross, CAS).

ACHAEARANEA ZONENSIS Levi

Map 2

Achaearana zonensis Levi, 1959, Bull. Mus. Comp. Zool., 121: 69, figs. 32-34, ♀, ♂. Male holotype from Panama Canal Zone in the Museum of Comparative Zoology.

Distribution. Panama, Peru, Brazil (Map 2).

Additional Records. *British Guiana.* Upper Essequibo River, (W. G. Hassler, AMNH). *Ecuador.* *Guayas*: Milagro (H. E., D. L. Frizzell); Julio Moreno (H. E., D. L. Frizzell). *El Oro*: 20 km SE of Machala (E. L. Moore). *Peru.* *Piura*: Cerro Negro (H. E., D. L. Frizzell). *Brazil.* *Pernambuco*: Recife (SMF). *Bahia*: Salvador (E. Goeldi, MNHN).

ACHAEARANEA RIOENSIS sp. n.

Figures 36-38

Type. Male holotype from Teresópolis, 900-1000 m elev., Est. Guanabara, Brazil, March 1949 (H. Sick), in the American Museum of Natural History. The specific name is after the type locality.

Description. Carapace grayish brown. Sternum yellow with dusky margin. Legs brown. Abdomen with white pigment spots

on dorsum. Venter black with a white spot on each side. Abdomen of female with posterior portion white, anterior and venter dark. Eyes subequal in size. Anterior median eyes two-thirds diameter apart, almost touching laterals. Posterior median eyes of male two-thirds diameter apart, one diameter from laterals. Female with posterior eyes one diameter apart, two-thirds diameter from laterals. Total length of female 2.7 mm. Carapace 1.10 mm long, 0.98 mm wide. First femur, 1.62 mm; patella and tibia, 1.69 mm; metatarsus, 1.38 mm; tarsus, 0.65 mm. Second patella and tibia, 1.17 mm; third, 0.85 mm; fourth, 1.40 mm. Total length of male 2.00 mm. Carapace 0.91 mm long, 0.77 mm wide. First femur, 1.62 mm; patella and tibia, 1.56 mm; metatarsus, 1.30 mm; tarsus, 0.62 mm. Second patella and tibia, 1.10 mm; third, 0.71 mm; fourth, 0.96 mm.

Diagnosis. The cymbium and embolus (Fig. 36) differ in shape from those of *A. taeniata*. The female is smaller than *A. taeniata* and has a similar epigynum (Fig. 38). The possibility that the female and male do not belong together, and that the female is actually *A. taeniata*, should be considered; however, no other specimens of the latter species have been found from southeastern Brazil.

Records. *Brazil.* *Guanabara:* Teresópolis, 7-9 Nov., 1945, ♀; March 1949, 2 ♀ paratypes (H. Sick, AMNH); Sumaré, Cidade Rio de Janeiro, Feb. 1946, ♀ (H. Sick, AMNH).

ACHAEARANEA TAENIATA (Keyserling)

Map 2

Theridium taeniatum Keyserling, 1884, Die Spinnen Amerikas, Theridiidae, 2(1): 12, pl. 1, fig. 2, ♀, ♂. Female, male syntypes from Caracas, Venezuela, in the Institut Royal des Sciences Naturelles, Brussels, examined.

Theridion salvadorens Kraus 1955, Abhandl. senckenbergischen naturf. Gesell., no. 493: 17, figs. 34-36, ♀. Female type from El Salvador in the Senckenberg Museum. NEW SYNONYMY.

Achaearana taeniata, — Levi, 1959, Bull. Mus. Comp. Zool., 121: 72, figs. 39-41, ♀, ♂.

The distance between each other and the size of the two black spots in the epigynum are variable. A paratype of *Theridion salvadorens* examined was the only specimen whose posterior epigynal margin was sclerotized, and the two spots were relatively small. Otherwise, it does not seem to differ.

Distribution. Guatemala, Trinidad, Venezuela to Peru (Map 2).

Additional records. *Costa Rica*: 11 km W of Turrialba, "from walls of canyon" (Hamilton). *Venezuela. Aragua*: Maracay, 1935, 1936 (P. C. Vogl, ZSM). *Dist. Federal*: La Guaira, 1888 (E. Simon); Caracas, 1888 (E. Simon, MNHN). *Colombia. Cundinamarca*: 23 km SE of Cáqueza, March 1955, ♂ (E. I. Schlinger, E. S. Ross, CAS). *Tolima*: Ibaguë, March 1955, ♀ (E. I. Schlinger, E. S. Ross, CAS). *Peru. Junín*: Uteuyacu, March 1948, ♂ (F. Woytkowski, AMNH).

ACHAEARANEA TOVARENSIS sp. n.

Figure 29

Type. Male holotype from Tovar, Aragua, Venezuela, January, February 1888 (E. Simon), in the Muséum National d'Histoire Naturelle, Paris (no. 10986). The species is named after the type locality.

Description. Carapace, sternum, legs reddish brown. The anterior half of abdomen black; posterior of dorsum with three black spots and small white pigment spots that invade the anterior black area in two places. Venter all black with two small white spots side by side. Anterior median eyes slightly larger than others, their radius apart, one-quarter diameter from laterals. Posterior median eyes two-thirds diameter apart, one diameter from laterals. Chelicerae with one blunt tooth on anterior margin. Total length 2.5 mm. Carapace 1.2 mm long, 1.0 mm wide. First femur, 1.9 mm; patella and tibia, 1.9 mm; metatarsus, 1.4 mm; tarsus, 0.7 mm. Second patella and tibia, 1.3 mm; third, 0.9 mm; fourth, 1.3 mm.

Diagnosis. This species differs from *A. tacuata* and other *Achaearana* by having a thorn on the side of the embolus (Fig. 29).

ACHAEARANEA DIAMANTINA sp. n.

Figure 41

Type. Male holotype from Minas de Serrinha, Diamantina, Minas Gerais, Brazil, Feb.-March 1945 (E. Cohn), in the American Museum of Natural History. The species is named after the type locality; the specific name is a noun in apposition.

Description. Carapace, sternum, legs, yellowish. Dorsum of abdomen covered with a black patch, surrounded by white pigment spots. Venter colorless yellowish white. Eyes subequal in size. Anterior median eyes one diameter apart, almost touching

laterals. Posterior median eyes less than one diameter apart, one diameter from laterals. Total length 1.7 mm. Carapace 1.00 mm long, 0.84 mm wide. First femur, 1.98 mm; patella and tibia, 2.00 mm; metatarsus, 2.01 mm; tarsus, 0.65 mm. Second patella and tibia, 1.06 mm; third, 0.68 mm; fourth, 1.05 mm.

Diagnosis. The shape of the cymbium and the position of the S-shaped duct in the palpus (Fig. 41) separate this species from *A. hirta*.

ACHAEARANEA HIRTA (Taczanowski)

Map 2

Argyrodes hirtus Taczanowski, 1873, Horae Soc. Ent. Rossicae, 9: 119.

Female syntypes from Cayenne, French Guiana, in the Polish Academy of Sciences, Warsaw, examined.

Achaea undata Keyserling, 1884, Die Spinnen Amerikas, Theridiidae, 2(1): 105, pl. 5, fig. 68, ♀, ♂. Female, male syntypes from Amazonas, Brazil, in the Hope Department of Entomology, Oxford, examined.

Achaea guadalupensis Keyserling 1884, *op. cit.*, p. 110, pl. 5, fig. 72, ♀. Female type from Guadalupe [Guadalupe, Libertad], Peru, in the Polish Academy of Sciences, Warsaw, examined.

Achaea ignota Keyserling, 1884, *op. cit.*, p. 112, pl. 5, fig. 73, ♀. Female syntype from Minas Gerais, [Brazil], in the Hope Department of Entomology, Oxford, examined.

Theridium bentiflexum Keyserling, 1891, *op. cit.*, Brasilianische Spinnen, 3: 184, pl. 6, fig. 129, ♂. Male holotype from Rio Grande do Sul, Brazil, in the British Museum, examined.

Chrysso maronica Caporale, 1954, Comm. Pontifica Acad. Sci., 16: 74, fig. 11, ♀. Female type from S. Jean du Maroni, French Guiana, in the Muséum National d'Histoire Naturelle, Paris, examined.

Achaearana hirta, — Levi, 1959, Bull. Mus. Comp. Zool., 121: 70, figs. 35-38, ♀, ♂; map 1.

The abdomens of specimens from one collection from near Caraga, Minas Gerais, are variable. Some species have it wider than long, others longer than wide.

Distribution. Central America to southern Brazil (Map 2).

Additional records. *Venezuela.* *Dist. Fed:* Hacienda Corosal (E. Simon, MNHN); Caracas (E. Simon, MNHN); La Guaira (E. Simon, MNHN). *Aragua:* Maracay (SMF). *Carabobo:* San Estebán (E. Simon, MNHN). *British Guiana.* Rupununi River (W. G. Hassler, AMNH); Kartabo, Bartica Distr. (W. Beebe, AMNH); Georgetown (A. M. Nadler, AMNH). *French Guiana.* Cayenne (A. M. Nadler, AMNH). *Ecuador.* *Guayas:* Milagro (H. E., D. L. Frizzell); W. of Guayaquil (R. V. Landes); Guayaquil (Carvalho); Colonche (R. V. Landes). *Peru.* *Piura:*

Sechura (D. L. Frizzell); Quebrada Mogollón (H. S. M.); 19 km N of Máncora (H. E., D. L. Frizzell). *Junín*: La Merced (A. M. Nadler, AMNH). *Brazil. Pernambuco*: Recife (SMF; A. M. Nadler, AMNH). *Goyás*. (MNHN). *Bahia*. Condeúba, "S. Ant. da Barra" (MNHN); Salvador (A. M. Nadler, AMNH; E. Göldi, MNHN). *Minas Gerais*: Minas Serinha, Diamantina (E. Cohn, AMNH); Rio Tijuca near Caraca (Gounelle, MNHN). *Espírito Santo*: Santa Teresa (A. M. Nadler, AMNH). *Guana- bara*: Teresópolis, 900-1000 m (H. Sick, AMNH); Nieterói (Cornell Univ. Exped.); Rio de Janeiro (A. M. Nadler, AMNH). *São Paulo*: São Paulo (Hammad; A. M. Nadler, AMNH). *Santa Catarina*: Nova Teutonia, lat 27°11'S, long 52°23'W (F. Plau- mann, SMF). *Paraguay*. (Dr. Bohls, BMNH).

ACHAEARANEAE CHIRICAHUA Levi

Figures 39-40

Achaearanae chiricahua Levi, 1955, Amer. Mus. Novitates, no. 1718: 26, figs. 57-59. ♀. Female holotype from Rustler Camp, Chiricahua Mountains, Cochise Co., Arizona, in the American Museum of Natural History.

Description. Male. Carapace dusky yellowish, sternum brown, legs yellowish with indistinct bands. Dorsum of abdomen with indistinct white and gray markings. Venter black with a large white patch between epigastric groove and spinnerets. Eyes subequal in size. Anterior medians two-thirds diameter apart, less than one-quarter diameter from laterals. Posterior eyes two-thirds diameter apart. Total length 2.4 mm. Carapace 1.1 mm long, 0.9 mm wide. First femur, 2.5 mm; patella and tibia, 2.3 mm; metatarsus, 1.9 mm; tarsus, 0.8 mm. Second patella and tibia, 1.7 mm; third, 1.1 mm; fourth, 1.4 mm.

The white ventral spot indicates that the specimen is the previously unknown male of *A. chiricahua*.

Record. Arizona. Pima Co.: Rose Canyon access road, just off Mt. Lemmon Rd., 2200 m, Santa Catalina Mtns., under rock in open area, yellow pine, oak, 17 June 1961 (J. Beatty).

ACHAEARANEAE PARANA sp. n.

Figure 42

Type. Male holotype from Taguararapa, Alto-Parana, Para- guay, 1908, in the American Museum of Natural History. The specific name is a noun in apposition after the province of the type locality.

Description. Carapace grayish brown. Sternum reddish brown. Legs lighter yellow-brown. Abdomen with typical white and black streaks like many species of *Achacaranea*. Venter with a pair of white spots side by side on black background. Eyes subequal in size. Anterior median eyes one diameter apart, almost touching laterals. Posterior eyes a little less than their diameter apart. Total length 2.3 mm. Carapace 1.04 mm long, 0.92 mm wide. First femur, 1.82 mm; patella and tibia, 1.82 mm; metatarsus, 1.62 mm; tarsus, 0.62 mm. Second patella and tibia, 1.14 mm, third, 0.67 mm; fourth, 1.08 mm.

Diagnosis. This species can be separated from *A. cinnabarina* by the coloration and different shape of embolus and the conductor (Fig. 42).

ACHAEARANEA CINNABARINA sp. n.

Figures 46, 62-63

Type. Male holotype from Teresópolis, Est. Guanabara, Brazil, 6 March 1946 (H. Sick), in the American Museum of Natural History. The specific name refers to the orange color of the species.

Description. Carapace and sternum orange. Legs yellowish gray. Abdomen orange in male, that of female with a white line running from center of dorsum toward venter and posterior on each side; darker behind white line; a white line above spinnerets. Anterior median eyes of male slightly smaller than others, one and one-quarter diameters apart, their radius from laterals. Posterior eyes a little less than their diameter apart. Eyes of female subequal in size. Anterior median eyes a little less than their diameter apart, their radius from laterals. Posterior eyes their diameter apart. Total length of female 4.7 mm. Carapace 1.9 mm long, 1.5 mm wide. First femur, 3.6 mm; patella and tibia, 3.6 mm; metatarsus, 3.5 mm; tarsus, 1.1 mm. Second patella and tibia, 2.2 mm; third, 1.4 mm; fourth, 2.6 mm. Total length of male 2.2 mm. Carapace 0.99 mm long, 0.85 mm wide. First femur, 1.82 mm; patella and tibia, 1.75 mm; metatarsus, 1.53 mm; tarsus, 0.69 mm. Second patella and tibia, 0.94 mm; third, 0.65 mm; fourth, 0.98 mm.

Diagnosis. In color, *A. cinnabarina* is unlike other *Achacaranea*. The different shape of embolus and conductor (Fig. 46) separate this species from *A. parana*. The epigynum has only a slight swelling (Fig. 63). The short connecting ducts separate it from *A. koepekei*.

Records. Brazil. Pernambuco: Recife (SMF). *Guanabara:* Teresópolis, 7-9 Nov. 1945, ♀ paratype; 6 March 1946, ♀ ♂ paratype (H. Sick, AMNH); *Petrópolis*, 850 m, 2 Nov. 1945, 2 ♀ paratypes (H. Sick, AMNH). *São Paulo:* Jequirituba, Cidade de São Paulo, 22-23 Dec. 1945 (H. Sick, AMNH).

ACHAEARANEA PORTERI (Banks)

Map 1

Theridion porteri Banks, 1896, in Blatchley, Ann. Rept. Indiana Geol. Surv., 21: 203. Female syntypes from Porters Cave, Indiana, in the Museum of Comparative Zoology.

Achaearana porteri,—Levi, 1955, Amer. Mus. Novitates, no. 1718: 30, figs. 71-75, 80-82, ♀, ♂; 1959, Bull. Mus. Comp. Zool., 121: 6.

Distribution. Eastern United States, West Indies to Panama (Map 1).

Additional Records. United States. North Carolina. Durham Co.: Duke Forest, Apr. 1935 (A. M. Chickering). *Missouri.* Laclede Co.: cave (G. Kastler). *Arkansas.* Washington Co.: 15 mi. S of Prairie Grove (M. Hite). *Texas.* Austin, 1909 (R. V. Chamberlin). *Kansas.* Douglas Co.: Natural History Reservation, July 1960 (H. Fitch). *Mexico. Nuevo León:* El Potosí, June 1938 (H. Hoogstraal).

ACHAEARANEA RUPICOLA (Emerton)

Map 1

Theridion rupicola Emerton, 1882, Trans. Connecticut Acad. Sci. 6: 14, pl. 2, fig. 2, ♀, ♂. Syntypes from Peabody, Massachusetts, in the Museum of Comparative Zoology.

Achaearana rupicola,—Levi, 1955, Amer. Mus. Novitates, no. 1718: 21, figs. 47-52, 56, ♀, ♂.

Distribution. Eastern United States (Map 1).

Additional records. Ohio. Holmes Co.: Glenmont, 3 June 1958, ♀, under wood in dry oak forest (J. A. Beatty). Wayne Co.: Springville, Oct. 1958, ♀ (J. A. Beatty).

ACHAEARANEA TEPIDARIORUM (C. L. Koch)

Map 1

Theridium tepidarium C. L. Koch, 1841, Die Arachniden, 8: 75, figs. 646-648, ♀, ♂. From greenhouses of the botanical gardens, Erlangen, Bavaria.

Achaearana tepidarium,—Levi, 1955, Amer. Mus. Novitates, no. 1718: 32, figs. 69-70, 83-84, ♀, ♂.

Note. The specific name is an adjective in the genitive plural and has to keep its ending.

Distribution. Cosmopolitan. The species may be native to South America. While *A. tepidariorum* is one of the commonest house spiders its distribution is not as well known as might be suspected (Map 1). Its absence in areas of Canada and western states may be due to field collectors not collecting in cities where it thrives in buildings. It has not been recently collected in the West Indies and Mexico. In Peru it has been found in a field.

Records. *Canada.* Nova Scotia (Emerton, 1920, Trans. Roy. Canadian Inst. 12: 310). *Ontario:* Roekport (W. Creighton); Toronto; Port Credit; Amherstburg. *British Columbia.* Vancouver Island: Qualicum (R. Guppy); Wellington. *United States* (counties). *Maine:* Androscoggin; Cumberland; Hancock; Lincoln. *New Hampshire:* Carroll; Hillsboro. *Vermont:* Addison. *Massachusetts:* Barnstable; Bristol; Essex; Middlesex; Norfolk; Plymouth; Suffolk; Worcester. *Connecticut:* Fairfield; Hartford; New Haven; Windham. *New York:* Cattaraugus; Jefferson; Monroe; Nassau; Oneida; Putnam; Saint Lawrence; Suffolk; Sullivan; Thompson; Wyoming. *New Jersey:* Bergen; Mercer. *Pennsylvania:* Franklin; Montgomery. *Ohio:* Ashland; Ottawa; Richland; Wayne. *Maryland:* Washington; Montgomery. *West Virginia:* Ohio. *Virginia:* Albemarle; Fairfax. *Kentucky:* Campbell. *Tennessee:* Davidson; Roane; Robertson; Sevier; Van Buren. *North Carolina:* Avery; Buncombe; Haywood; Mecklenburg; Moore; New Hanover; Orange; Swain; Union; Wake; Watauga. *South Carolina:* Charleston. *Georgia:* Fulton; Habersham; Turner. *Florida:* Alachua; Low Key in Florida Bay; Orange. *Alabama:* Baldwin; Calhoun; Dallas; Lee; Madison; Mobile; Morgan; Sumter; Tallapoosa; Tuscaloosa. *Mississippi:* Forrest; Jackson; Pike. *Louisiana:* East Baton Rouge; Lincoln; Orleans; Richland; Vernon. *Michigan:* Chippewa; Gladwin; Kalamazoo; Lapeer; Macomb; Midland; Oceana. *Indiana:* Floyd; Putnam. *Wisconsin:* Clark; Crawford; Dane; Door; Grant; Iowa; Kenosha; Lafayette; Marathon Milwaukee; Outagamie; Richland. *Illinois:* Cook; Hardin; Jackson; Monroe; Saint Clair. *Minnesota:* Mille Laes; Olmsted; Winona. *Iowa:* Story. *Missouri:* Cole; Jackson; Saline; St. Louis; Vernon. *Arkansas:* Benton; Washington. *Kansas:* Bourbon; Harper; Riley. *Texas:* Angelina; Aransas; Galveston; Harris; Harrison; Henderson; Jefferson; Jim Wells. *Colorado:* Denver. *Washington:* King; Thurston. *Oregon:* Benton; Coos; Douglas;

Hood; Josephine; Lane; Multnomah. *California*: Kern; Los Angeles; Marin; Mariposa; Mendocino; Orange; San Diego; Santa Barbara.

Hawaii: Oahu.

Bermuda Islands. *Costa Rica*: Cartago (N. L. H. Krauss, AMNH). *British Guiana*. Tumatumari (F. E. Lutz). *Ecuador*. *Azuay*: Lago Zurucuehu, 18 km W of Cuenca (E. I. Schlinger, E. S. Ross, CAS). *Peru*. *Loreto*: Bogueron, 470 m (F. Woytkowski, AMNH). *Huánuco*: Carpish, 20 km E of Acomayo (F. Woytkowski, AMNH); Tingo María (numerous collections); Divisoria (F. Woytkowski, AMNH). *Lima*: Lima, cotton field (W. Weyrauch). *Junín*: Uteuyacu (F. Woytkowski, AMNH); Colonia del Perené (E. I. Schlinger, E. S. Ross, CAS). *Ica*: N. Chíncha Isl. (W. Vogt, AMNH). *Brazil*. *Minas Gerais*: Belo Horizonte (N. L. H. Krauss, AMNH); near Patrocínio (G. Andrews); Ouro Preto (N. L. H. Krauss, AMNH); Minas Serinha, Diamantina (E. Cohn, AMNH); Vicosá (Hambleton, AMNH). *Guanabara*: Teresópolis (H. Sick, AMNH). *São Paulo*: Cidade São Paulo (H. Sick, AMNH). *Paraná*: Curitiba (N. L. H. Krauss, AMNH). *Santa Catarina*: Pinhal, 700 m (A. Maller); Nova Teutônia, lat 27°11'N, long 52°23'W (F. Plaumann, SMF). *Rio Grande do Sul*: Pelotas (C. Biezanko, AMNH). *Uruguay*. Montevideo (C. Biezanko, AMNH). *Paraguay*. Caazapá: Pastoreo (D. Nees); Itapúa: Encarnación (C. J. D. Brown). *Argentina*. Buenos Aires (SMF). *Chile*. *Antofagasta*: Taltal (H. Zapfe); Antofagasta (Dr. Macchiavello). *Santiago*: Santiago (SMF).

ACHAEARANEAE INOPS sp. n.

Figure 43

Type. Male holotype from Akaramukra Rapids, Upper Essequibo River, British Guiana, 4 Oct. 1937 (W. G. Hassler) in the American Museum of Natural History. The specific name is an arbitrary combination of letters.

Description. Carapace dusky gray, sternum gray, legs dusky but lighter than carapace. Abdomen gray, darker on posterior of dorsum and on venter. Anterior median eyes slightly larger than others, three-quarters diameter apart, one-quarter from laterals. Posterior eyes their diameter apart. Total length 1.2 mm. Carapace 0.71 mm long, 0.65 mm wide. First femur, 0.88 mm. Second patella and tibia, 0.66 mm; third, 0.48 mm; fourth, 0.67 mm.

Diagnosis. The course of the duct inside the tegulum (Fig. 43) and the three tips of the cymbium separate this species from *A. hirta*.

ACHAEARANEA UVIANA sp. n.

Figure 44

Type. Male holotype from Utcuyacu, Junín, 1600-2200 m elev., Peru, 4 April 1948 (F. Woytkowski), in the American Museum of Natural History. The specific name is an arbitrary combination of letters.

Description. Carapace, sternum, legs dark grayish brown, proximal ends of femora lighter. Abdomen black with a white stripe going down on each side and a pair of white spots side by side on venter. Anterior median eyes slightly larger than others, their radius apart, almost touching laterals. Posterior eyes a little less than their diameter apart. Total length 1.8 mm. Carapace 0.94 mm long, 0.78 mm wide. First femur, 1.36 mm; patella and tibia, 1.44 mm; metatarsus, 1.30 mm; tarsus, 0.63 mm. Second patella and tibia, 0.98 mm; third, 0.69 mm; fourth, 0.94 mm.

Diagnosis. The long cymbium, expanded at its tip (Fig. 44) separates this species from other *Achaearana*.

ACHAEARANEA SICKI sp. n.

Figures 48, 70-71

Type. Male holotype, from Teresópolis, Est. Guanabara, 900-1000 m elev., Brazil, 7-9 Nov. 1945 (H. Sick), in the American Museum of Natural History. The species is named after its collector Dr. H. Sick.

Description. Carapace, sternum dark brown. Legs red-brown. Abdomen very dark with typical coloring: sides with black patches, separated by irregular white lines; a white line above spinnerets. Male with anterior half of abdomen dark, posterior half light. Anterior median eyes subequal or slightly larger than others. Anterior median eyes one diameter apart, almost touching laterals. Posterior eyes one diameter apart. Eyes of male slightly closer together. Abdomen higher than long. Total length of female 3.6 mm. Carapace 1.3 mm long, 1.1 mm wide. First femur, 1.9 mm; patella and tibia, 1.8 mm; metatarsus, 1.6 mm; tarsus, 0.7 mm. Second patella and tibia, 1.2 mm; third, 1.0 mm; fourth, 0.72 mm. Total length of male 2.1 mm. Carapace 0.85 mm long, 0.69 mm wide. First femur, 1.23 mm; patella

and tibia, 1.27 mm; metatarsus, 0.80 mm; tarsus, 0.41 mm. Second patella and tibia, 0.90 mm; third, 0.63 mm; fourth, 0.91 mm.

Diagnosis. The epigynum of this species is flat with an indistinct opening (Fig. 71); the seminal receptacles are oval and the connecting ducts very short (Fig. 70). This species can be separated from all other *Achaearana* by the forked embolus of the male (Fig. 48).

Records. 2 ♀ paratypes collected with holotype.

ACHAEARANEA PALLIPERA nomen novum

Figure 49

Theridium pallipes Keyserling 1891, Die Spinnen Amerikas, Brasilianische Spinnen, p. 191, pl. 6, fig. 138, ♂. Male type from Serra Vermelha, Est. Rio de Janeiro [Guanabara], Brazil, in the British Museum, examined.

Note. Keyserling's name is a junior homonym of *Linyphia pallipes*, Lucas, 1846 which was placed by Walckenaer (1847, Histoire Naturelle des Insectes Aptères, 4: 497) in *Theridion*.

Description. Carapace, sternum pale orange-yellow, some gray in eye region. Legs light gray, proximal ends of femora pale orange-yellow. Abdomen black except for a light ring around spinnerets and white triangular spot pointing posteriorly at anterior end of dorsum. Anterior median eyes almost twice the diameter of others, two-thirds their diameter apart, almost touching laterals. Posterior median eyes one and one-half diameters apart, one diameter from laterals. Abdomen oval, one and one-half times longer than wide, slightly projecting above spinnerets, resembling that of species belonging to the genus *Chrysso*. Total length 2.3 mm. Carapace 1.0 mm long, 0.9 mm wide. First femur, 1.7 mm; patella and tibia, 1.6 mm; metatarsus, 1.3 mm; tarsus, 0.7 mm. Second patella and tibia, 1.0 mm; third, 0.7 mm; fourth, 1.0 mm.

Figure 49 was prepared from the holotype.

Record. Brazil. Guanabara: Rio de Janeiro, ♂ (E. Germain, MNHN).

ACHAEARANEA KASPI sp. n.

Figures 50-51

Type. Female holotype from Carpish, 20 km east of Acomayo, 2800 m elev., Huánuco, Peru, 9-12 Oct. 1946 (F. Woytkowski), in the American Museum of Natural History. The specific name is an arbitrary combination of letters.

Description. Carapace dark grayish brown, with a lighter patch on each side. Sternum brown with a darker border that widens opposite each coxa, and a black spot in middle. Legs banded light and dark brown, light bands slightly narrower than dark ones; palpi and coxae light brown. Abdomen with two white wavy lines that fuse in middle of dorsum and continue as a single line to spinnerets; the two wavy lines enclose some black and white patches in front. Another white line around anterior and above pedicel continues on sides as a series of white spots. Sides with black streaks. Venter with two small black marks posterior to epigynum and another two anterior to spinnerets. Eyes subequal in size. Anterior median eyes three-quarters diameter apart, three-quarters diameter from laterals. Posterior median eyes one diameter apart, one and one-half diameters from laterals. Total length 6.8 mm. Carapace 2.7 mm long, 2.2 mm wide. First femur, 5.0 mm; patella and tibia, 5.6 mm; metatarsus, 4.6 mm; tarsus, 1.5 mm. Second patella and tibia, 3.5 mm; third, 2.3 mm; fourth, 4.0 mm.

Diagnosis. The opening is in a transverse dark spot in the epigynum (Fig. 51). The shape of opening and spot separate the species from *A. legnisi*.

ACHAEARANEA ACORENSIS (Berland), new combination

Map 1

Theridion acorensis Berland, 1932, Ann. Soc. Ent. France, 101: 74, figs. 1, 2, ♀. Female holotype from the Azores in the Muséum National d'Histoire Naturelle, Paris. — Machado, 1941, Publ. Instituto de Zool. "Augusto Nobre," no. 3: 22, figs. 18-21, ♀, ♂.

Achaearana geocharis Levi, 1955, Amer. Mus. Novitates, no. 1718: 20, ♀, ♂. Male holotype from Monterey, California, in the American Museum of Natural History. NEW SYNONYMY.

American distribution. California (Map 1). This species might have been introduced into the United States with grapes. However a female *Achaearana* from New Zealand determined as *Theridion tubercula* (Urquhart) by Miss E. B. Bryant seems to be this species. Possibly *A. acorensis* is a cosmopolitan species.

ACHAEARANEA GIGANTEA (Keyserling), new combination

Figures 52-54

Theridium giganteum Keyserling, 1884, Die Spinnen Amerikas, Theridiidae, 2(1): 31, pl. 1, fig. 15, ♀. Female lectotype here designated from Maraynioc, [Junín, prov. Tarma], Peru, in the Polish Academy of Sciences, Warsaw, examined.

This large species has the epigynum sclerotized and swollen (Figs. 53, 54). The illustrations were made from specimens in the British Museum.

Record. *Peru. Junín*: Huancayo, 3200 m, Aug. 1940 (W. Weyrauch, AMNH); 60 km E of Carhuamayo, 15 Sept. 1954 (E. I. Schlinger, E. S. Ross, CAS).

ACHAEARANEA LEGUIAI (Chamberlin), new combination

Figures 55-56

Theridion leguii Chamberlin, 1916, Bull. Mus. Comp. Zool., 60: 229, pl. 15, figs. 7-10, ♀. Female holotype from Conservidayo River [Conservidayoc, Cuzco], Peru, in the Museum of Comparative Zoology, examined.

Record. *Ecuador. Napo Pastaza*: Mera, 12 Feb. 1955, ♀ (E. I. Schlinger, E. S. Ross, CAS), uncertain determination.

ACHAEARANEA ANASTEMA sp. n.

Figures 57-59

Type. Female holotype from Caracas, Venezuela, Dec. 1887-Feb. 1888 (E. Simon), in the Muséum National d'Histoire Naturelle, Paris (no. 3811). The specific name is an arbitrary combination of letters.

Description. Color of carapace reddish brown. Sternum, legs yellow-brown. Abdomen yellowish gray with a white transverse pigment stripe across highest portion (Fig. 59). Venter with some gray pigment. Eyes subequal in size. Anterior median eyes their diameter apart, almost touching laterals. Posterior median eyes one diameter apart, two-thirds diameter from laterals. Abdomen very high (Fig. 59). Total length 1.5 mm. Carapace 0.55 mm long, 0.45 mm wide. First femur, 0.97 mm; patella and tibia, 0.78 mm; metatarsus, 0.65 mm; tarsus, 0.38 mm. Second patella and tibia, 0.59 mm; third, 0.41 mm; fourth, 0.59 mm.

Diagnosis. This species is close to *A. conjuncta* (Gertsch and Mulaik) but differs by having the openings of the epigynum hidden behind a lip (Fig. 58). Figure 57 shows the internal genitalia from slightly posterior.

ACHAEARANEA BANOSENSIS sp. n.

Figures 60-61

Type. Female holotype from Baños, Tungurahua Prov., Ecuador, 15-21 June 1943 (H. E. and D. L. Frizzell) in the Museum

of Comparative Zoology. The species is named after the type locality.

Description. Carapace gray-brown. Sternum yellow-brown with darker brown border and streaks. Legs yellow-brown with wide but indistinct darker bands. Abdomen black, white and brown with a white line from highest point to spinnerets and a wavy white line going from middle of dorsum down each side. The white lines do not quite touch on dorsum but split in two. Abdomen black anterior to line; posterior to line a brown band, followed by black. Eyes subequal in size. Anterior median eyes two-thirds diameter apart, one-quarter diameter from laterals. Posterior eyes one diameter apart. Chelicerae with one tooth on anterior margin. Total length 5.0 mm. Carapace 1.9 mm long, 1.5 mm wide. First femur, 3.1 mm; patella and tibia, 3.0 mm; metatarsus, 2.7 mm; tarsus, 0.9 mm. Second patella and tibia, 1.9 mm; third, 1.4 mm; fourth, 2.3 mm.

Diagnosis. The epigynum has an oval depression showing two black spots inside. Posterior to the depression is a swelling; anterior to the swelling, posterior to the opening, is a black lip (Fig. 61). The swelling and very short connecting ducts (Fig. 60) separate the species from *A. tepidariorum*.

Records. *Ecuador.* *Tungurahua:* Baños, 1800 m, July 1938, Apr. 1939 ♀ (W. C. Macintyre). *Pichincha:* Río Pilatón, W slope of Andes, 1000-1200 m, Sept. 1944, ♀ (G. W. Prescott).

ACHAEARANEA KOEPCKEI sp. n.

Figures 64-66

Type. Female holotype from Hacienda Taulis, lat 6°50'S, long 79°10'W, Cajamarca, Peru, cleared area in mountain virgin forest, 1700 m elev., 29 April 1954 (H. W. Koepeke), in the Senckenberg Museum (no. SMF 10950/1). The species is named after the collector.

Description. Carapace, sternum, legs yellow-brown with distal ends of tibiae darker. Abdomen gray with an anterior dorsal, transverse, white line and dark patches and minute white pigment spots on dorsum (Fig. 64), and a short longitudinal white line above spinnerets. Venter of abdomen with irregular dark spots, a transverse band behind epigynum and two dark spots anterior to spinnerets. Anterior median eyes slightly larger than others, their diameter apart, their radius from laterals. Posterior median eyes two-thirds diameter apart, their diameter

from laterals. Chelicerae with a blunt tooth on anterior margin. Total length 5.8 mm. Carapace 1.9 mm long, 1.5 mm wide. First femur, 2.9 mm; patella and tibia, 3.0 mm; metatarsus, 2.3 mm; tarsus, 1.1 mm. Second patella and tibia, 2.2 mm; third 1.4 mm; fourth, 2.3 mm.

Diagnosis. The elbowed connecting ducts (Fig. 65) separate *A. kocpekci* from *A. cinnabarina* and *A. sicki*.

ACHAEARANEA CHILENSIS sp. n.

Figures 67-69

Type. Female holotype from Zapallar, Aconcagua, Chile, 27 Nov. 1950 (E. S. Ross, A. E. Michelbacher), in the California Academy of Sciences. The species is named after the country where it is found.

Description. Carapace grayish yellow. Sternum yellow-white with dark brown spots. Legs yellow-white with small black spots and distal ends of segments brown. Abdomen with indistinct gray streaks on sides, somewhat similar to *A. tepidariorum*. Anterior median eyes smaller than others, one diameter apart, one-quarter diameter from laterals. Posterior eyes two-thirds diameter apart. Abdomen with a large posterior, dorsal tubercle (Fig. 67). Total length 3.2 mm. Carapace 1.04 mm long, 0.94 mm wide. First femur, 2.30 mm; patella and tibia, 2.10 mm; metatarsus, 1.95 mm; tarsus, 0.78 mm. Second patella and tibia, 1.27 mm; third, 0.89 mm; fourth, 1.40 mm.

Diagnosis. The epigynum has a median depression with a posterior lip (Fig. 69). The long ducts (Fig. 68) separate *A. chilensis* from *A. lota*.

Record. 1 ♀ paratype collected with holotype.

ACHAEARANEA ANALISTA sp. n.

Figures 72-74

Type. Female holotype from Nova Teutonia, lat 27°11'S, long 52°23'W, Santa Catarina, Brazil (F. Plaumann), in the Senckenberg Museum (no. RII/13455/1). The specific name is an arbitrary combination of letters.

Description. Carapace bright yellow, eye region deep black. Sternum yellow with a black spot on each anterior lateral corner. Legs yellow. Abdomen whitish with well-defined black spots (Fig. 72). Eyes subequal in size. Anterior median eyes one

diameter apart, almost touching laterals. Posterior eyes two-thirds diameter apart. Total length 2.9 mm. Carapace 1.00 mm long, 0.88 mm wide. First femur, 1.50 mm; patella and tibia, 1.50 mm; metatarsus, 1.27 mm; tarsus, 0.55 mm. Second patella and tibia, 0.99 mm; third, 0.70 mm; fourth, 1.16 mm.

Diagnosis. The epigynum (Fig. 74) is quite similar to that of *A. cinnabarina*; however, this species is smaller and the coloration (Fig. 72) differs.

Record. Brazil. *Espírito Santo*: Santa Teresa, Jan. 1959, ♀ (A. M. Nadler, AMNH).

ACHAEARANEA CAQUEZA sp. n.

Figures 75-76

Type. Female holotype from 22 km SE of Cáqueza, Cundinamarca, Colombia, 10 March 1955 (E. I. Schlinger, E. S. Ross), in the California Academy of Sciences. The specific name is a noun in apposition after the type locality.

Description. Carapace, sternum, legs yellow-brown. Abdomen with dorsum brown and a white line around anterior with a short median white line branching off. Also an indistinct large V-shaped mark on dorsum with two white lines going down sides. Venter with a white spot adjacent and behind epigynum, occupying one-third of the area between epigynum and spinnerets. Eyes subequal in size. Anterior median eyes two-thirds diameter apart, one-third from laterals. Posterior median eyes slightly oval. The shorter diameter of posterior median eyes one and one-third diameters apart and the same distance from laterals. Abdomen without tubercle. Total length 5.3 mm. Carapace 2.2 mm long, 1.9 mm wide. First femur, 2.9 mm; patella and tibia, 3.3 mm; metatarsus, 2.7 mm; tarsus, 1.1 mm. Second patella and tibia, 2.2 mm; third, 1.8 mm; fourth, 2.7 mm.

Diagnosis. The epigynum has a dark sclerotized oval area on a relatively flat shield that is only slightly arched behind opening. The relative flatness of the epigynum separates this species from those allied to *A. giganteum*. The large size of the species separates it from the smaller *A. apex* with its similar epigynum. The coloration separates it from *A. cinnabarina* and *A. analista*.

ACHAEARANEA MIGRANS (Keyserling), new combination

Figures 77-83; Map 2

Theridium migrans Keyserling, 1884, Die Spinnen Amerikas, Theridiidae, 2(1): 18, pl. 1, fig. 6, ♀. Female lectotype here designated from

Lechugal, Tumbes, Peru, in the Polish Academy of Sciences, Warsaw, examined. According to a letter received from J. Prószyński no specimens could be located from Pumamarca, the locality published. The type locality may have been in error.

Tidarren fordum luctuosum Caporiacco, 1954, Comm. Pontifica Acad. Sci., 16:77. Female holotype from St. Jean du Maroni, French Guiana, in the Muséum National d'Histoire Naturelle, Paris, examined. NEW SYNONYMY.

Note. Chamberlin and Ivie (1934, Bull. Univ. Utah, biol. ser., 2(4): 11) placed this species in *Tidarren*. They probably did not examine specimens.

Description. Clypeus, sternum, legs almost black. Abdomen black with white stripes on dorsum (Fig. 83), and a white spot on the venter. The center of the epigynum lacks pigment and is brown. Anterior median eyes slightly larger than others and on slight tubercles. Anterior median eyes slightly less than their diameter apart, one-quarter diameter from laterals. Posterior median eyes one diameter apart, a little more than one diameter from laterals. Chelicerae with two teeth on anterior margin. Epigynum with two ducts visible in an area free of pigment (Figs. 78, 80, 82), very distinct from other species, but quite variable in shape. Total length of female type, 5.0 mm. Carapace 1.9 mm long, 1.6 mm wide. First femur, 3.2 mm; patella and tibia, 3.2 mm; metatarsus, 3.0 mm; tarsus, 0.9 mm. Second patella and tibia, 1.9 mm; third, 1.4 mm; fourth, 2.5 mm.

Figures 77-78 were prepared from the lectotype, Figures 79-80 from specimens in the British Museum coming from Peru, Figures 81-83 from the holotype of *Tidarren fordum luctuosum*.

Distribution. Northern South America (Map 2).

Records. *Venezuela.* *Carabobo:* La Cumbre, S of San Estebán, 1888 (E. Simon, MNHN). *British Guiana:* Kuyuwini Landing, Kuyuwini River (W. G. Hassler, AMNH). *Peru.* *Huánuco:* Tingo María (W. Weyrauch; J. C. Pallister, AMNH; E. I. Schlinger, E. S. Ross, CAS). *Junín:* Utcuyacu (F. Woytkowski). *Brazil.* *Amazonas.* (BMNH). *Espírito Santo:* Santa Teresa, Jan. 1959 (A. M. Nadler, AMNH), doubtful determination. *Paraná.* (BMNH).

ACHAEARANEAE PILATON sp. n.

Figures 84-85

Type. Female holotype from Río Pilatón, west slope of Andes, 1000-1200 m elev., Ecuador, Sept. 1944 (G. W. Prescott), in the

Museum of Comparative Zoology. The specific name is a noun in apposition after the type locality.

Description. Carapace yellow to brown, dusky in eye region. Sternum yellow. Legs yellow with brown bands in middle and distal ends of segments. Abdomen with a white pigment line around anterior, the dorsum with three pairs of wide dark brown bands going down sides, spaces between of equal width. In center of dorsum some white pigment and several brown spots. Venter with a black transverse line behind epigynum and two black spots anterior to spinnerets and some small spots of white pigment distributed in between. Anterior median eyes slightly larger than others, their radius apart, their radius from laterals. Posterior median eyes their diameter apart, one and one-half diameters from laterals. Abdomen suboval, longer than high. Total length 4.3 mm. Carapace 1.8 mm long, 1.6 mm wide. First femur, 3.0 mm; patella and tibia, 3.5 mm; metatarsus, 2.9 mm; tarsus, 1.1 mm. Second patella and tibia, 2.0 mm; third, 1.6 mm; fourth, 2.5 mm.

Diagnosis. The internal genitalia (Fig. 84) are heavily sclerotized, and the ducts are longer than the related *A. lequiai*; the posterior lip of the epigynum (Fig. 85) is wider, and the opening smaller. The swelling of the epigynum near the posterior border and the bordered opening separate it from *A. migrans*.

Record. 1 ♀ paratype collected with holotype.

ACHAEARANEAE JEQUITUBA sp. n.

Figures 98-99

Type. Female holotype from Jequituba, Cidade de São Paulo, Brazil, 22-23 Dec. 1945 (H. Sick), in the American Museum of Natural History. The specific name is a noun in apposition after the type locality.

Description. Carapace gray-brown. Sternum brown. Legs brown, distal segments darker. Anterior of abdomen black; in middle of abdomen a white line goes toward each side; posterior to white line, abdomen is lighter; a white line above spinnerets. Venter black, sometimes with a pair of white spots. The abdomen is variable in color. The coloration is like that of many species of *Achaearana*. Eyes subequal in size. Anterior median eyes one diameter apart, almost touching laterals. Posterior median eyes a little less than their diameter apart, two-thirds their shorter diameter from laterals. Abdomen without tubercle. Total length 2.7 mm. Carapace 1.05 mm long, 0.82 mm wide. First femur,

1.30 mm; patella and tibia, 1.30 mm; metatarsus, 1.00 mm; tarsus, 0.55 mm. Second patella and tibia, 0.91 mm; third, 0.55 mm; fourth, 1.01 mm.

Diagnosis. The epigynum has a squarish opening with a sclerotized rim; posterior is a shallow groove (Fig. 99). The ducts are very short (Fig. 98). The groove behind the opening and the shape of the opening separate it from other species.

Record. *Brazil. Guanabara:* Sumaré, Cidade Rio de Janeiro, 200-300 m, Jan. 1946 (H. Sick, AMNH). *Est. São Paulo:* 2 ♀ paratypes collected with holotype; Ribeirão Pires, Dec. 1945, 3 ♀ paratypes (H. Sick, AMNH). *Paraguay:* 1891-1893 (Dr. Bohls, BMNH).

ACHAEARANEAE BELLULA (Keyserling), new combination

Figures 86-90

Theridium bellulum Keyserling, 1891, *Die Spinnen Amerikas, Brasilianische Spinnen*, 3: 180, pl. 6, fig. 125, ♀. Female holotype from Neu Freiburg [Nova Friburgo, Guanabara], Brazil, in the British Museum, examined.

The abdomen of this species is higher than long (Fig. 89) and is orange in color. The generic placement is doubtful. A specimen from Santa Catarina has the more streaked coloration characteristic of *Achaearana* and a slightly different epigynum (Fig. 88). The abdomen of the minute male (1.5 mm total length) is higher than that of the female and has setae above the pedicel (Fig. 89). The carapace is highest in the thoracic region, having two swellings with a depression between.

Figures 86, 87 were prepared from the holotype.

Records. *Brazil. Pernambuco.* ♂ (SMF). *Santa Catarina:* Nova Teutonia, lat 27°11'S, long 52°23'W, ♀, ♂ (F. Plaumann, SMF).

ACHAEARANEAE ALACRE (Keyserling), new combination

Figures 91-92

Theridium alacre Keyserling, 1884, *Die Spinnen Amerikas, Theridiidae*, 2(1): 27, pl. 1, fig. 12, ♀. Female type from St. Fé de Bogotá [probably vicinity of Bogotá, Colombia] in the British Museum, examined. — ? Berland, 1913, in *Mission du Service, Arc de Méridien Equatorial*, 10(1): 86, pl. 8, figs. 16, 17, ♀.

The epigynum of this species is a heavily sclerotized flat plate with the center black (Fig. 92) and having two openings. The drawings were made from the holotype.

Records. *Venezuela. Dist. Fed.:* Caracas, 1887-1888, ♀ (E. Simon, MNHN).

ACHAEARANEA PINGUE (Keyserling), new combination

Figures 93-94

Theridium pingue Keyserling, 1886, Die Spinnen Amerikas, Theridiidae, 2(2): 235, pl. 20, fig. 290, ♀, ♂. Female lectotype here designated from Blumenau [Santa Catarina], Brazil, in the British Museum, examined.

Description. Specimen from Uruguay. Carapace yellowish with head region a murky gray that continues as a broad band to thoracic depression; sides gray. Sternum olive-gray. Legs yellowish with gray bands as wide as intermediate areas. Abdomen with black and white pigment. A black diamond-shaped mark anterior on dorsum, a black patch on each side with white streaks going down sides behind patch; a pair of white spots, side by side, on venter. Anterior median eyes slightly smaller than others, their diameter apart, almost touching laterals. Posterior eyes their diameter apart. Total length 2.8 mm. Carapace 1.04 mm long, 0.85 mm wide. First femur, 1.56 mm; patella and tibia, 1.58 mm; metatarsus, 1.36 mm; tarsus, 0.62 mm. Second patella and tibia, 1.10 mm; third, 0.80 mm; fourth, 1.30 mm.

The epigynum has the opening in a black spot, and has a lighter, projecting posterior area (Fig. 94). The projecting posterior area is wider (extending towards the sides) in the specimen from Uruguay than in the lectotype. The seminal receptacles are dumb-bell shaped with very short ducts (Fig. 93). The illustrations were prepared from the lectotype.

Records. *Uruguay*: La Sierra, 26 Jan. 1899, ♀ (Silvestri, MNHN).

ACHAEARANEA ERAMUS sp. n.

Figures 95-97

Type. Female holotype from Sumaré, Cidade Rio de Janeiro, 300-400 m elev., Brazil, Feb. 1946 (H. Sick), in the American Museum of Natural History. The specific name is an anagram of the type locality.

Description. Carapace yellow-brown, darker in head region. Sternum yellow-brown. Legs yellow-brown with brown indistinct rings as wide as intermediate areas. Abdomen with the dorsum having a black pattern (Fig. 95); venter with indistinct black spots and a black ring around spinnerets. Eyes subequal in size. Anterior median eyes one and one-quarter diameters apart, their radius from laterals. Posterior eyes one diameter apart. Total length 3.5 mm. Carapace 1.7 mm long,

1.4 mm wide. First femur, 2.9 mm; patella and tibia, 2.9 mm; metatarsus, 2.5 mm; tarsus, 1.2 mm. Second patella and tibia, 1.8 mm; third, 1.3 mm; fourth, 2.2 mm.

Diagnosis. The larger posteriorly directed swelling of the epigynum with larger openings on the surface (Fig. 97) separates this species from *A. alacre*. The generic placement is uncertain.

Record. Brazil. Guanabara: Teresópolis, ♀ (Bruner, MNHN).

ACHAEARANEA ISANA sp. n.

Figures 100-102, 113-114

Type. Male holotype from Nova Teutonia, lat 27°11'S, long 52°23'W, Santa Catarina, Brazil (F. Plaumann), in the Senckenberg Museum (no. R11/7507/1). The specific name is an arbitrary combination of letters.

Description. Carapace yellowish, eye region reddish with a narrow, red, longitudinal band in cephalic region. Margins gray. Sternum yellow. Legs yellow with narrow black and red bands. Abdomen speckled grayish white and black, genital area black; white between genital area and spinnerets. Clypeus of male with a slight groove from eyes to chelicerae, emphasized by dark pigment. Anterior eyes subequal in size, one diameter apart, touching laterals. Posterior eyes two-thirds their diameter apart. Both sexes have a rather long abdomen with a posterior dorsal tubercle (Fig. 100). Total length of female 2.2 mm. Carapace 0.69 mm long, 0.65 mm wide. First femur, 1.45 mm; patella and tibia, 1.30 mm; metatarsus, 0.93 mm; tarsus, 0.52 mm. Second patella and tibia, 0.78 mm; third, 0.55 mm; fourth, 0.91 mm. Total length of male 1.5 mm. Carapace 0.68 mm long, 0.66 mm wide. First femur, 1.82 mm; patella and tibia, 1.80 mm; metatarsus, 1.36 mm; tarsus, 0.49 mm. Second patella and tibia, 0.91 mm; third, 0.55 mm; fourth, 0.83 mm.

Diagnosis. The species is distinct from others in that the epigynum has a pair of comma-shaped openings side by side (Fig. 102) and the palpus has a cone-shaped embolus (Fig. 113).

Records. Two ♀, 2 ♂ paratypes collected with holotype.

ACHAEARANEA RAPA sp. n.

Figures 103-106

Type. Male holotype from Taguararapa [? Tacuara], Alto-Parana, Paraguay [? 1908], in the American Museum of Natural History. The specific name is an arbitrary combination of letters.

Description. Carapace yellow, sometimes dusky at sides. Sternum, legs, yellow. Abdomen of male light grayish with darker and white marks; venter darker gray. Abdomen of female with pattern like *A. nigrovittata* (Keyserling) with a white Y on the dorsum, having on each side a wide line going down the side and having other dark or light marks sometimes, but no two specimens look alike. Anterior median eyes slightly largest in male, subequal in female. Anterior median eyes two-thirds diameter apart, less than one-third diameter from laterals. Posterior median eyes one diameter apart, about their radius from laterals. Total length of female 2.7 mm. Carapace 1.10 mm long, 0.92 mm wide. First femur, 1.95 mm; patella and tibia, 1.76 mm; metatarsus, 1.60 mm; tarsus, 0.65 mm. Second patella and tibia, 1.04 mm; third, 1.10 mm; fourth, 1.23 mm. Total length of male 1.4 mm. Carapace 0.71 mm long, 0.59 mm wide. First femur, 1.00 mm; patella and tibia, 1.03 mm; metatarsus, 0.83 mm; tarsus, 0.45 mm. Second patella and tibia, 0.70 mm; third, 0.43 mm; fourth, 0.65 mm.

Diagnosis. The female of this species can be separated from *A. scrax* by the greater distance between seminal receptacles (Fig. 105); the palpus differs from that of *A. nigrovittata* (Keyserling) by having a thicker and shorter median apophysis and embolus (Fig. 103).

Records. ♂ paratype and several ♀ paratypes collected with holotype "Paraguay" ♀ (Germain, MNHN).

ACHAEARANEA PUSSILANA (Roewer), new combination

Figure 111

Theridium pusillum Keyserling, 1884, Die Spinnen Amerikas, Theridiidae, 1(1): 87, pl. 4, fig. 55, ♂. Male holotype from Uassa, French Guiana [Rio Uaça; Amapa, Brazil], in the Polish Academy of Sciences, Warsaw, examined. Not *Theridion pusillum* Wider, 1834.

Theridion pussilanum Roewer, 1942, Katalog der Araneae, vol. 1, p. 497. New name for *Theridion pusillum* Keyserling, preoccupied.

The palpus lacks a median apophysis and the embolus is broadly attached (Fig. 111). It probably belongs to *Achacarana*. Figure 111 was prepared from the holotype.

ACHAEARANEA ORANA sp. n.

Figure 112

Type. Male holotype from Guayaquil, Guayas, Ecuador, 21 March 1942 (H. E. and D. L. Frizzell), in the Museum of Comparative Zoology. The specific name is an arbitrary combination of letters.

Description. Carapace orange-yellow; legs yellow; abdomen yellow, sides with some gray. Eyes subequal in size. Anterior median eyes one diameter apart, their radius from laterals. Posterior median eyes one diameter apart, one and one-quarter diameters from laterals. Total length 1.73 mm. Carapace 0.83 mm long, 0.73 mm wide. Second patella and tibia, 1.10 mm; third, 0.78 mm; fourth, 1.11 mm.

Diagnosis. The embolus of *A. orana* (Fig. 112) is smaller than that of *A. milagro* and *A. isana*.

ACHAEARANEA NIGROVITTATA (Keyserling), new combination

Figure 110; Map 2

Theridium nigrovittatum Keyserling, 1884, Die Spinnen Amerikas, Theridiidae, 2(1): 26, pl. 1, fig. 11, ♀. Female holotype from Lechugal [Tumbes], Peru, in the Polish Academy of Sciences, Warsaw, lost.

Theridium obnubilum Keyserling, 1891, Die Spinnen Amerikas, Brasilianische Spinnen, 3: 187, pl. 6, fig. 132, ♂. Male holotype from Serra Vermella, Est. Rio de Janeiro, Brazil, in the British Museum, examined. NEW SYNONYMY.

Theridium boqueronicum Kraus, 1955, Abhandl. Senckenbergischen naturf. Gesell. no. 493: 18, figs. 37-39, ♀. Female type from El Salvador in the Senckenberg Museum, examined. NEW SYNONYMY.

Achaearana mesax Levi, 1959, Bull. Mus. Comp. Zool., 121: 74, figs. 53-56, ♀, ♂. Male holotype from Barro Colorado Island, Panama Canal Zone, in the Museum of Comparative Zoology. NEW SYNONYMY.

Note. Although the type of *T. nigrovittatum* could not be found, Keyserling's description and measurements match those given for *A. mesax*. Keyserling's illustration is a more posterior view of the epigynum than figure 55 in Levi, 1959.

Figure 110 was prepared from the type of *Theridium obnubilum*.

Distribution. Mexico, Cuba, to Paraguay (Map 2).

Additional Records. *Costa Rica:* Hamburg Farm (C. R. Dodge). *Venezuela:* Maracay, ♂ (A. M. Nadler, AMNH). *Dist. Federal:* La Guaira (E. Simon, MNIIN), doubtful determination. *French Guiana:* Cayenne (A. M. Nadler, AMNH). *Ecuador:* Los Rios: Pichilingue (E. I. Schlinger, E. S. Ross, CAS). *Guayas:* Guayaquil (D. L. Frizzell); Milagro (H. E., D. L. Frizzell); prov.?, Balzapampa (W. C. MacIntyre). *El Oro:* Quebrada Bejucal, 10 km WSW of Arenillas (R. Walls); Buena Vista, 25 km SE of Machala (R. Walls). *Peru:* Loreto: Pebas, C. Cocho (Math., MNIIN). *Piura:* Pariñas Valley (H. E., D. L. Frizzell); Cerro Prieto, La Breu; Quebrada Songoro (H.

E., D. L. Frizzell); Mallares, Río Chira (H. E., D. L. Frizzell). *Huánuco*: Monzón Valley, Tingo María (E. I. Schlinger, E. S. Ross, CAS). *Junín*: Colonia del Perené (E. I. Schlinger, E. S. Ross, CAS). *Brazil. Pará*: Belém, ♂ (A. M. Nadler, AMNH). *Goyás*: (MNHN). *Paraguay. Alto Parana*: Taguararapa (AMNH). *Bolivia. La Paz*: Puente Villa Yungas, 1200 m (L. Peña, ISNB).

ACHAEARANEAE MICRATULA (Banks), new combination

Figure 109

Dipocna micratula Banks, 1909, Proc. Acad. Nat. Sci. Philadelphia, 61: 205, pl. 6, fig. 29, ♂. Male holotype from Orosi, Costa Rica, in the Museum of Comparative Zoology, examined.

Description. Carapace yellow. Eyes with blackish rings. Legs and sternum yellow. Abdomen missing. Anterior median eyes very slightly larger than posterior medians, lateral eyes a little smaller than others. Anterior median eyes more than a diameter apart, touching laterals. Posterior median eyes one diameter apart, less than one diameter from laterals. Carapace 0.50 mm long, 0.46 mm wide. First femur, 0.65 mm; patella and tibia, 0.65 mm; metatarsus, 0.48 mm; tarsus, 0.37 mm. Second patella and tibia, 0.51 mm; third, 0.35 mm; fourth, 0.51 mm.

Figure 109 was prepared from the holotype.

ACHAEARANEAE TESSELATA (Keyserling)

Map 2

Theridium tessellatum Keyserling, 1884, Die Spinnen Amerikas, Theridiidae, 1(1): 48, pl. 2, fig. 27, ♀. Female holotype from Nancho [?Cajamarea] Peru, in the Polish Academy of Sciences, Warsaw, examined.

Theridium picadoi Banks, 1909, Proc. Acad. Nat. Sci., Philadelphia, p. 204. Female holotype from Orosi, Costa Rica, in the Museum of Comparative Zoology, examined. NEW SYNONYMY.

Achacaranea tercx Levi, 1959, Bull. Mus. Comp. Zool., 121: 74, fig. 52, ♂. Male holotype from Baues, Oriente, Cuba, in the American Museum of Natural History. NEW SYNONYMY.

Achacaranea tessclata, — Levi, 1959, *ibid.*, 121: 76, figs. 70-71, ♀.

Achacaranea picadoi, — Levi, 1959, *ibid.*, 121: 76, figs. 57-60, ♀.

Distribution. (Map 2.) Probably cosmotropical. Tamaulipas, Mexico, Cuba to Paraguay; New Guinea (Levi, 1959); also a specimen from Chittagong, hill tracts, Mahullya, 7 mi. N of Manimukh, Pakistan, March 1958 (R. Paynter).

Additional Records. *Venezuela.* *Carabobo:* Puerto Cabello (E. Simon, MNHN). *Colombia.* *Cauca:* 24 km S of Corinto (E. I. Schlinger, E. S. Ross, CAS). *Valle:* 27 km W of Sevilla (E. I. Schlinger, E. S. Ross, CAS). *Meta:* Restrepo (J. Bequaert). *Ecuador.* *Manabi:* Manta (D. L. Frizzell). *Guayas:* I. de Puná (D. L. Frizzell); Guayaquil (H. E., D. L. Frizzell). *Peru.* *Piura:* Quebrada Mogollón; Sullana; 6 km W of Sullana; Las Lomas; Pariñas Valley; N of Malares, Río Chira; Quebrada Songora (all H. E., D. L. Frizzell). *Huánuco:* Tingo María (J. C. Pallister, AMNH; W. Weyrauch). *Brazil.* *Guanabara:* Sumaré, Cidade Rio de Janeiro, 220-300 m (H. Sick, AMNH). *Paraná:* Caviúna (A. Maller). *Santa Catarina:* Nova Teutônia, lat 27°11'S, long 52°23'W (F. Plaumann, SMF). *Paraguay.* (Dr. Bohls, BMNH).

ACHAEARANEA FLORENDIDA Levi

Map 1

Achaearana florendida Levi, 1959, Bull. Mus. Comp. Zool., 121(3): 65, figs. 17, 20-21, ♀, ♂. Male holotype from Panama Canal Zone, in the Museum of Comparative Zoology.

Distribution. Texas to Venezuela (Map 1).

Additional record. *Venezuela.* *Aragua:* Tovar, 1888, ♀ (E. Simon, MNHN).

ACHAEARANEA MILAGRO sp. n.

Figures 13-15, 107-108

Type. Male holotype from Milagro, Guayas, Ecuador, 4 July 1943 (H. E., D. L. Frizzell), in the Museum of Comparative Zoology. The specific name is a noun in apposition after the type locality.

Description. Carapace orange, eye region black, sometimes some faint dusky patches on sides. Sternum orange. Legs yellowish gray, proximal ends of femora yellow. Abdomen gray with black and white spots (Fig. 13). Eyes subequal in size. Anterior median eyes one and one-half diameters apart, one-third diameter from laterals. Posterior median eyes one and one-quarter diameters apart, one diameter from laterals. Total length of female 2.0 mm. Carapace 0.80 mm long, 0.66 mm wide. First femur, 1.17 mm; patella and tibia, 1.17 mm; metatarsus, 0.96 mm; tarsus, 0.60 mm. Second patella and tibia, 0.80 mm; third, 0.60 mm; fourth, 0.91 mm. Total length of male

1.6 mm. Carapace 0.78 mm long, 0.65 mm wide. First femur, 1.17 mm; patella and tibia, 1.22 mm; metatarsus, 0.73 mm; tarsus, 0.47 mm. Second patella and tibia, 0.80 mm; third, 0.59 mm; fourth, 0.80 mm.

Diagnosis. The epigynum of *A. milagro*, unlike that of other species, has a light oval depression in a white area, with an opening on each side of the depression (Fig. 15). The palpus differs from that of *A. orana* by having the embolus with a larger base (Fig. 108).

Records. *Ecuador.* *Guayas:* Milagro, 10 May 1942, 4 July 1943. ♀, ♂ paratypes (H. E., D. L. Frizzell).

ACHAEARANEA TRINIDENSIS Levi

Map 2

Achacaranea trinidadensis Levi, 1959, Bull. Mus. Comp. Zool., 121: 68, figs. 29-31, ♂. Male holotype from Trinidad in the American Museum of Natural History.

Distribution. Trinidad to Peru (Map 2).

Additional record. *Peru. Junin:* Utenyacu, 1600-2200 m, March 1948. ♂ (F. Woytkowski, AMNH).

ECHINOTHERIDION gen. nov.

Type species. *Echinotheridion cartum* sp. n. The generic name is neuter, and derived from "spiny *Theridion*."

Description. Small theridiid spiders, 2-3 mm total length. Carapace like that of *Achacaranea* and *Theridion*. Anterior median eyes of the known species slightly larger than others, less than their diameter apart, almost touching laterals. Eyes of posterior row equally spaced. Clypeus straight. Chelicerae (of *E. cartum*) with two anterior lightly sclerotized teeth (Fig. 119). First leg longest; fourth slightly shorter or subequal; third shortest. Legs short, first patella and tibia 1-1.2 times carapace length. Fourth coxae with a mesal spur. Abdomen suboval, higher than long (Fig. 120). Colulus absent. The coloration of the four species is similar; carapace and legs are yellowish; the legs are uniform in color and there is a white longitudinal stripe above the spinnerets.

Female with two seminal receptacles. The epigynum is a very large sclerotized plate partly overhung anteriorly by the coxal spurs which seem to be a functional part of the epigynum (Fig. 121). Males unknown.

Diagnosis. *Echinotheridion* differs from other theridiid spiders by the presence of spurs on the fourth coxae (Fig. 121).

Distribution. South America. One species from Venezuela, one from Ecuador, one from the Amazon Basin and one from southeastern Brazil and Paraguay (Map 3).



Map 3. Distribution of *Echinotheridion* species.

Key to species of *Echinotheridion*

- 1a. Posterior half of epigynum with a transverse, lightly sclerotized swelling (Fig. 116); Venezuela *elicolum* sp. n.
- 1b. Epigynum otherwise 2
- 2a. Epigynum with a central protruding knob whose posterior face has a subcircular, lightly sclerotized patch (Figs. 123, 124); Ecuador *otlum* sp. n.
- 2b. Epigynum otherwise, relatively flat 3
- 3a. Epigynum with a short anterior scape (sometimes broken off) having an opening below on each side (Fig. 118); southeastern Brazil to Paraguay *cartum* sp. n.
- 3b. Epigynum with a shallow transverse, anterior groove (Fig. 126); Amazon area *utibile* (Keyserling)

ECHINOTHERIDION CARTUM sp. n.

Figures 117-121; Map 3

Type. Female holotype from Apa [River], Paraguay, 1908-1909, in the American Museum of Natural History. The specific name is an arbitrary combination of letters.

Description. Carapace yellowish, head gray. Sternum black. Legs yellowish brown. Dorsum of abdomen black with an anterior light spot, two spots on each side and a line above spinnerets (Fig. 120). Venter yellowish with a black spot between spinnerets and epigynum. Anterior median eyes slightly larger than others, three-quarters diameter apart, one-third diameter from laterals. Posterior median eyes one diameter apart, a little more than one diameter from laterals. Total length 2.4 mm. Carapace 0.91 mm long, 0.87 mm wide. First femur, 1.20 mm; patella and tibia, 1.10 mm; metatarsus, 1.01 mm; tarsus, 0.57 mm. Second patella and tibia, 0.85 mm; third, 0.71 mm; fourth, 1.07 mm.

Diagnosis. *Echinotheridion cartum* differs from *E. otlum* and *E. utile* by the epigynum (Fig. 118), which is a large sclerotized shield, quite flat, with two openings anterior underneath a scape. The scape is broken off in some specimens; in others there may be a flat spine on its base (not shown in Fig. 118). The coxal spurs fit over the openings (Fig. 121). The seminal receptacles and connecting ducts show through the transparent, though heavily sclerotized, shield.

Natural History. This species has been collected in bamboo undergrowth in Teresópolis.

Records. *Brazil.* *Guanabara:* Petrópolis, 2-5 Nov. 1945 (H. Sick, AMNH); Teresópolis, March 1946 (H. Sick, AMNH). *Paraguay.* ♀ paratype collected with type.

ECHINOTHERIDION OTLUM sp. n.

Figures 122-123; Map 3

Type. Female from 16 km north of Manglaralto, Guayas, Ecuador, 30 Jan. 1955 (E. I. Schlinger, E. S. Ross), in the California Academy of Sciences. The specific name is an arbitrary combination of letters.

Description. Carapace, sternum, legs, yellow. Abdomen grayish with a median longitudinal white line on posterior part of dorsum and a curved white line on each side. Anterior median

eyes slightly larger than others, two-thirds diameter apart, one-quarter diameter from laterals. Posterior eyes their diameter apart. Abdomen suboval, slightly higher than long. Total length 2.4 mm. Carapace 0.91 mm long, 0.80 mm wide. First femur, 1.24 mm; patella and tibia, 1.14 mm; metatarsus, 0.98 mm; tarsus, 0.52 mm. Second patella and tibia, 0.86 mm; third, 0.71 mm; fourth, 1.14 mm.

Diagnosis. The species differs from *E. cartum* and *E. utibile* by the knob-shaped epigynum (Figs. 123, 124). The openings of the epigynum seem to be on the posterior side of the knob or around the lightly sclerotized patch on the posterior side.

ECHINOTHERIDION UTIBILE (Keyserling), new combination

Figures 125-126; Map 3

Theridium utibile Keyserling, 1884, Die Spinnen Amerikas, Theridiidae, 1(1): 28, pl. 1, fig. 13, ♀. Female holotype from Amazonas, Brazil, in the Hope Department of Entomology, Oxford University, examined.

Description. Carapace, sternum, legs, yellow. Abdomen colorless with two dorsal, longitudinal white lines which are fused in front and behind, and continue as a single line to the spinnerets. Three white lines go down each side from the dorsal, longitudinal lines. The venter has two white spots side by side behind the epigynum. The anterior median eyes are slightly larger than the others, two-thirds their diameter apart, almost touching laterals. Posterior median eyes one diameter apart, a little less than their diameter from laterals. The abdomen is quite high. Total length 2.9 mm. Carapace 1.00 mm long, 0.91 mm wide. First femur, 1.30 mm; patella and tibia, 1.12 mm; metatarsus, 0.91 mm; tarsus, 0.53 mm. Second patella and tibia, 0.91 mm; third, 0.71 mm; fourth, 1.06 mm.

Diagnosis. The epigynum (Fig. 126) has a flat shield with a wide anterior groove. The groove is bordered on the anterior by a thin sclerotized ridge. The groove and ridge separate the species from *E. clicolum*, *E. otium* and *E. cartum*.

ECHINOTHERIDION ELICOLUM sp. n.

Figures 115-116; Map 3

Theridion cidrelicola Simon, 1894, Histoire Naturelle des Araignées, 1: 536, figs. 547, 552, 553; 1895, Ann. Soc. Ent. France, 64: 139. Female and male syntypes from Colonia Tovar, [Aragua], Venezuela, in the Muséum National d'Histoire Naturelle, Paris, examined.

When examining the syntype specimens of *Theridion cidrelicola* Simon in Paris in 1958, I found that male and female do not belong together. A label was placed in the vial indicating that the female will be chosen lectotype. This was done in accord with the usual taxonomic procedure of labelling the lectotype specimen and later publishing on it. The female was chosen lectotype at the time to avoid transferring the name to another family. On my return, I learned that Dr. W. J. Gertsch was preparing a further paper on the American Symphytonathidae. I made available the drawings and notes made on my recent European trip to reciprocate for the many courtesies he has shown me. His paper was published in 1960 (Gertsch, 1960, Amer. Mus. Novitates, no. 1981). Gertsch correctly placed the male in the genus *Lucarachne* Bryant, and designated the male as lectotype. Therefore, it is necessary for me to give the female a new name. The name is an arbitrary combination of letters.

REFERENCES

LEVI, H. W.

1955. The spider genera *Coressa* and *Achacaranea* in America north of Mexico. Amer. Mus. Novitates, no. 1718: 1-33.

1959. The spider genera *Achacaranea*, *Theridion* and *Sphyrotinus* from Mexico, Central America and the West Indies. Bull. Mus. Comp. Zool. 121: 55-163.

(In press) Nineteenth Century South American Araneology. Papéis Avulsos, Sao Paulo.

LEVI, H. W., AND L. R. LEVI

1962. The genera of the spider family Theridiidae. Bull. Mus. Comp. Zool. 127(1): 1-71.

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